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MISSOURI BOTANICAL GARDEN

BULLETIN

71

1983

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MISSOURI BOTANICAL
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Missouri Botanical Garden Bulletin

Volume LXXI, Number 1
February 1983
Includes Calendar for February/March 1983

Bits and Pieces; Scraps of Paper

Hotel bills. A restaurant check for lunch. A currency exchange receipt (£90 for 2268 francs). We would not save these things, these scraps of paper. Oh perhaps we would keep them a few weeks, until the credit card bills came in so that we could reconcile them but we surely would not save them ourselves for 38 years—along with every check we wrote, every receipt for a doctor's visit, picture frame repair, groceries—the minutiae of life—and then pass them on to the care of succeeding generations.

But Henry Shaw saved them. And the Missouri Botanical Garden preserves all of these checks and restaurant bills and receipts for subscriptions to the *Missouri Republican* in its archives.

Until recently, our idea of an archives came from a visit, as part of a grade-school class trip, to the National archives in Washington, D.C. in which were exhibited, in glass cases, copies of the Declaration of Independence, the Bill of Rights, and the Articles of Confederation. The word archives meant (for us) a place in which significant historical documents were displayed for visitors; a public museum of paperwork.



Not so. In the Missouri Botanical Garden Archives are 3,348 blueprints, 6,447 sheet maps, 194 group portraits, 706 individual portraits, 2,229 magic lantern slides, 5,555 pieces of artwork, 12,957 items in the papers of Henry Shaw, and 19,529 documents in the papers of George Englemann.

In all, there are nearly 145,000 items in the collection. Far from being a place for the exhibit of a handful of curious or significant documents, the Garden's archives are an important resource for historical reference. (Although several recent exhibits have been mounted using material from the archives, including an exhibit of the work of the late-nineteenth century botanist-educator Sarah Frances Price, the historical display in the barrel vault of the Ridgway Center, and the extremely popular traveling exhibit, *500 Years of Botanical Illustration*.)

In the past nine months, 125 people from 15 states — from Maine to New Mexico; from Washington to Virginia—and 5 countries have used the archives, engaged in various researches.

Barbara Mykrantz, archivist since 1979 (she came to the Garden as a volunteer in 1976) keeps records of all who use the archives, and reads some of the entries to us:

"A man from University College in England was doing a history of greenhouses and used our glass plate negatives to determine how the design of American greenhouses was influenced by those of England.

"Someone developing a Master Plan for a small arboretum in Oregon used, as models, the several Master Plans the Garden has had in its history.

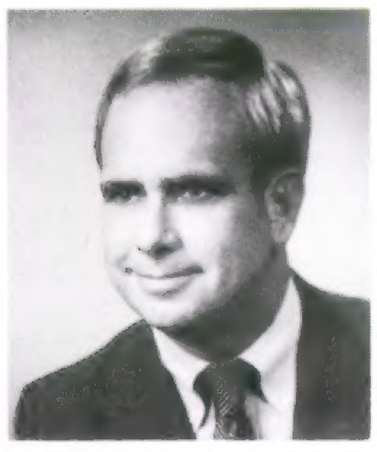
"A young man from a propagation company in Illinois is using the Engelmann papers to determine what plants were collected near Beardstown, Illinois, in the mid-1800s so that he can preserve these species."

The report goes on—people writing books, studying history, researching business history (for a time, the Harvard School of Business had Henry Shaw's business papers since they considered them to be one of the finest, representative collections for merchants and banking history of the century), compiling biographies of prominent scientists.

Among the important collections held in the archives are the papers of Henry Shaw, which include personal correspondence, business correspondence, cancelled checks, receipts for household goods and for business transactions, memorabilia (for example, a certificate proclaiming that on July 10, 1840, Shaw passed behind Niagra Falls), and manuscripts Shaw wrote on historical subjects. The archives also hold the papers of George Engelmann, which include his voluminous

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Comment



On January 19, the Missouri Botanical Garden, the St. Louis Zoo, The Saint Louis Art Museum, and the Museum of Science and Natural History presented requests to the St. Louis Zoo-Museum District to ask voters in St. Louis City and County, on April 5, for increases in property taxes for the support of these institutions.

We will be asking voters to allow us to benefit from a tax of four cents per hundred dollars assessed valuation; as you know, the Garden does not now receive any direct tax support and is, in fact, the only major botanical garden in the world not to receive such support.

The Zoo and the Art Museum are each asking for an additional tax of four cents per hundred dollars assessed valuation over the four cents they each receive currently. The Science Museum is requesting an additional three cents over the one cent it already receives.

These cultural institutions are essential to the quality of life we have in St. Louis. They are vital educational resources for our schools as well as important sources of recreation and edification for the general public. Last year, the Garden alone taught almost 50,000 students about biology, natural history and gardening.

Our priorities for the use of these funds will be for major repairs and renovations that are desperately needed in the

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Gardening in St. Louis

Winter—A Time for Reading & Planning

Gardening Books

There are many good books on gardening so it is sometimes difficult to choose which are the best. Some of my favorites include:

Home Wisdom Gardening by Dick & Jan Raymond, 303 pgs., $9.95. Profiles of the most popular vegetables highlight this interesting, well-written book. It also contains information on cooking and canning, and recipes for each group of plants. A 300-page book bargain!

Trees of Northern America by Thomas E. Elias, 948 pgs., $19.95. This authoritative guide discusses and illustrates nearly 800 North American trees. It is useful to you as a field guide if you are on a horticultural holiday in California or for your day-to-day use in St. Louis. A *must* reference for tree lovers.

The Shrub Identification Book and *The Tree Identification Book* by George W. D. Symonds, 895 pgs., $9.95. Using both of these books, it is possible (and fun) to identify all of your trees and shrubs solely by looking at photographs of leaves, flowers, thorns, fruits, buds, and bark. This is one of the most easy-to-use and jargon-free books of identification that I've ever had the pleasure of reading.

Tropica-Color Encyclopedia of Exotic Plants & Trees by Alfred B. Graf, 1120 pgs., $115. This book is an extravaganza of color and information about tropical plants. All 7000 photographs are in color! If you want to purchase only one book to identify all your house plants, this is it.

Greenhouse Gro-How by John H. Pierce, 241 pgs., $19.95. Excellent drawings, charts, and photographs are in this book which is carefully and logically arranged. For beginning or experienced greenhouse growers, there is no better book.

Pruning by Christopher Brickell, 96 pgs., $7.95. The art of pruning can be very confusing. This book clears up many questions because of its concise text and detailed, accurate drawings. You can't go wrong if you use this book as a guide to pruning your roses, fruits, and shrubs.

Edible Landscaping by Rosalind Creasy, 379 pgs., $14.95. Growing your own fruits and vegetables or landscaping your home with ornamental plants are certainly not novel ideas, but landscaping your home using edible plants as ornamentals is. Ms. Creasy presents various overall plans for using edibles and gives growing tips for a large number of familiar, as well as unusual, plants.

(These books, and many others, are available in the Garden Gate Shop Book Department.)

What's New: New Vegetable Varieties

Every year at this time all gardeners are flooded with new catalogs proclaiming "newer, better, and bigger" vegetables and flower varieties. The trends of new vegetable varieties are definitely clear—more disease-resistant and compact plants.

Almost all vegetables have been miniaturized. One relatively new attempt is the cantaloupe. Two new varieties of "bush" cantaloupe are *Honeybush* from Burpee and *Musketeer* which is distributed by several seed companies.

So many new tomato varieties are introduced each year that it is difficult to keep up! Some of the good old standbys like *Better Boy* and *Supersonic* are hard to beat, but I did try two new ones last year. Both Burpee's *Super Beafsteak* and Park's *Whopper* grew well in my garden.


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Our Seeds, largely used by gardeners around St. Louis and in the large trucking districts of the South, meet the competition of seeds from all sources—and meet them successfully. We supply SEEDS THAT GROW and produce a profitable crop.

The *Super Beafsteak* yielded huge (almost grotesque) fruit. This improved form of the beafsteak tomato is much more disease resistant than the older types. This variety did show quite a bit of leaf curl, but this appears to be harmless.

Park's *Whopper* was a good producer which grew vigorously and yielded large, nicely-shaped fruits. It is similar in growth habit to *Better Boy*. I would recommend your trying both of these varieties next year in your garden. Let me know how they perform.

Scab-Free Apples

Have you always wanted to try growing your own apples, but were discouraged by complex spray schedules? These new apple varieties might be for you. Purdue, Rutgers, and the University of Illinois have worked to develop several cultivars (cultivated varieties) of apples which are immune to apple scab. This is probably the most common damaging disease of apples. You may still have to spray periodically for certain diseases and insects, but the frequency of spraying will be much reduced.

Three varieties introduced so far are:

Priscilla—a sweet, red apple of dessert quality which ripens a week before Jonathan.

Sir Prize—a yellow, late ripening apple which resembles Golden Delicious.

Prima—a red, early, fall-ripening apple which ripens 2½ weeks ahead of Jonathan. It also resembles Jonathan in appearance and flavor.

—Steven A. Frowine, Public Horticulture Specialist

Bits and Pieces

(continued from page 1)

correspondence from his contemporary botanists, his botanical notebooks, and his meterological observations. There are also the papers of two dozen other botanists including their correspondence and field notebooks.

These field notebooks are valuable as historical records of where these scientists collected their specimens. By consulting these notebooks, historians can map their explorations. One recent acquisition—and an extremely important one—were the field notebooks of Julian Steyermark for his collections in Guatemala. These list each plant collected, giving a brief description of the plant and the area in which it was found. (Steyermark received the Garden's Henry Shaw Medal in 1979 for his contributions to botany.)

In addition to these important documents, the archives also holds some unusual items. There is a section of a pin oak limb. The tree was planted in 1846 and cut, when it died at 102 in 1948; it was the last remaining tree from the ten-acre area Shaw first laid out as his Garden.

Shaw's microscope is in the archives, as well as a camera owned by the Garden at the end of the last century. There are keys to buildings that no longer exist and plans for buildings that were never built. There is also the shovel that was used to turn up the first spadeful of dirt for the construction of the Japanese Garden, and a copy of the menu and seating plan for the eighth annual trustees banquet, held in 1897.

Comment

(continued from page 1)

Climatron and other buildings as well as for our continued development of our programs for children and adults.

Without adequate support, it will be difficult or even impossible for these institutions to continue to provide the people of St. Louis the quality of service they expect and need. We ask you to support these important measures when you vote on April 5 and look forward to working with you so that the community will continue to benefit from all of its fine cultural institutions.

Peter H. Raven

The opening of the Ridgway Center was included in a St. Louis *Globe-Democrat* list of the most signficiant events in St. Louis during 1982. . . . . .

Type Specimens: A Valuable Resource

From New Scientist, April 22, 1982, come these two paragraphs of interest:

"Among the most vital sources for botany and zoology, however, are what biologists call "types," the actual specimens that were in front of the taxonomist when he first named a new species and drew up its description. Such specimens supply the ultimate proof that a particular species, bearing a particular scientific name, is actually what workers assume it to be. A description is never wholly complete. Thus, a subsequent worker may find minute hairs on the leaves of his specimens, but these are not mentioned in the original description nor in later ones. Were they merely overlooked, or is he dealing with a different species? Obviously the name that he uses for his material could be grossly misleading, for biological studies are of no real value unless there is a complete certainty of identity, a unique one-to-one relationship between name and object. Only with this certainty can the various streams of information in the literature be brought together to make a larger synthesis of knowledge.

"In this way, zoologists and botanists are much concerned with the physical basis for the scientific names they use. The basis may be a specimen, a type, but in some cases it may be a drawing or painting made by the original describer or made for him. In the absence of a type, such pictues can offer more clues than a dry description, especially if the latter was written in Latin and penned as much as 300 years ago, thus long before certain features now recognized as important in classification were considered significant."

In the herbarium of the Missouri Botanical Garden are three million plant specimens, making it the third largest of 1400 herbaria in the United States. The staff had estimated that of these, 50,000 were type specimens. However, a recently begun project to locate and catalogue these botanically valuable specimens indicates that this estimate may be considerably low. An examination of the Garden's 35,000 specimens of the Umbelliferae (carrot) family found that 227 of these were type specimens. The original number was 81, meaning that there were 146 or 180% more type specimens than previously considered. If the cataloging project shows similar results for all families, there could be as many as 140,000 type specimens in the herbarium.

When the project is complete, the catalog will be valuable for botanists visiting the Garden to examine these specimens. . . . . . .

The recent years have been a time of increasingly rapid growth of the Missouri Botanical Garden herbarium. Started when George Engelmann purchased the herbarium of Professor Johann Bernhardi in 1857—that collection contained more than 60,000 specimens—the herbarium today holds nearly 3 million mounted dried plant specimens. Dr. Marshall Crosby, Director of Research, anticipates that herbarium sheet 3 million will be added within the next several months.

Specimen number 1 million was added to the collection in 1931, or 74 years after the herbarium was begun. It required another 18 years (until 1949) for the next half-million specimens to be added, and another 21 years (until 1970) for the collection to reach 2 million. However, only eight years passed until specimen 2 million, 500 thousand was added and this most recent half-million specimens will have been added in only 5 years.

The current rate at which specimens are added means that the Garden's botany program is perhaps the world's most active. . . . . .



Mrs. Christopher S. Bond, wife of Missouri's governor, formally opened the first annual Fall Festival at the Garden on October 8. Displayed behind her is a needlework rug, loaned to the Garden by the Governor for display during the three-day festival, showing the state flowers of each of the fifty United States. Missouri's flower, the hawthorn, was used as the border. The Missouri Botanical Garden Library provided the illustrations on which each flower in the rug were based. These illustrations were part of the Garden's extensive collection of botanical art.

Henry Shaw Banquet

S. Dillon Ripley, Secretary of the Smithsonian Institution, and Leonard Hall, nationally renowned nature writer, were honored at the annual Henry Shaw Associates Dinner in November. Dr. Ripley received the Henry Shaw Medal not only for his leadership of the Smithsonian, but for his influence in museum work in general in the world. Mr. Hall received the Albert P. and Blanche Y. Greensfelder Medal for his four plus decades of writing about nature. (See Bulletin, *Vol. 70, Number 6.)*

Upon receipt of his award, Dr. Ripley delivered the featured address for the evening. Excerpts appear below.



S. Dillon Ripley, center, received by Henry Shaw Associates after delivering his featured address.

"I feel like an enormously lucky person tonight to be here in this lovely new building, which reminds me in a fascinating way of the Crystal Palace and all the marvelous creation of glass houses of the 19th Century. It is a pleasure to see another building which is of such style, of such elegance and to be able to be here rather soon after it opened and to think of how much St. Louis contributes to the cultural life of our nation."

"Something wrong has been going on for the last 25 or 30 years, and Peter Raven, [Garden Director] and I are aware of it. There has been a general neglect of the basic research and science of the environment . . . but we believe that the future



At the Henry Shaw Associates Dinner, left to right, C. C. Johnson Spink, President of Board of Trustees; Peter H. Raven, Director; and Leonard Hall, Greensfelder Award recipient.

is in the understanding of the environment, to which we are linked inseparably.

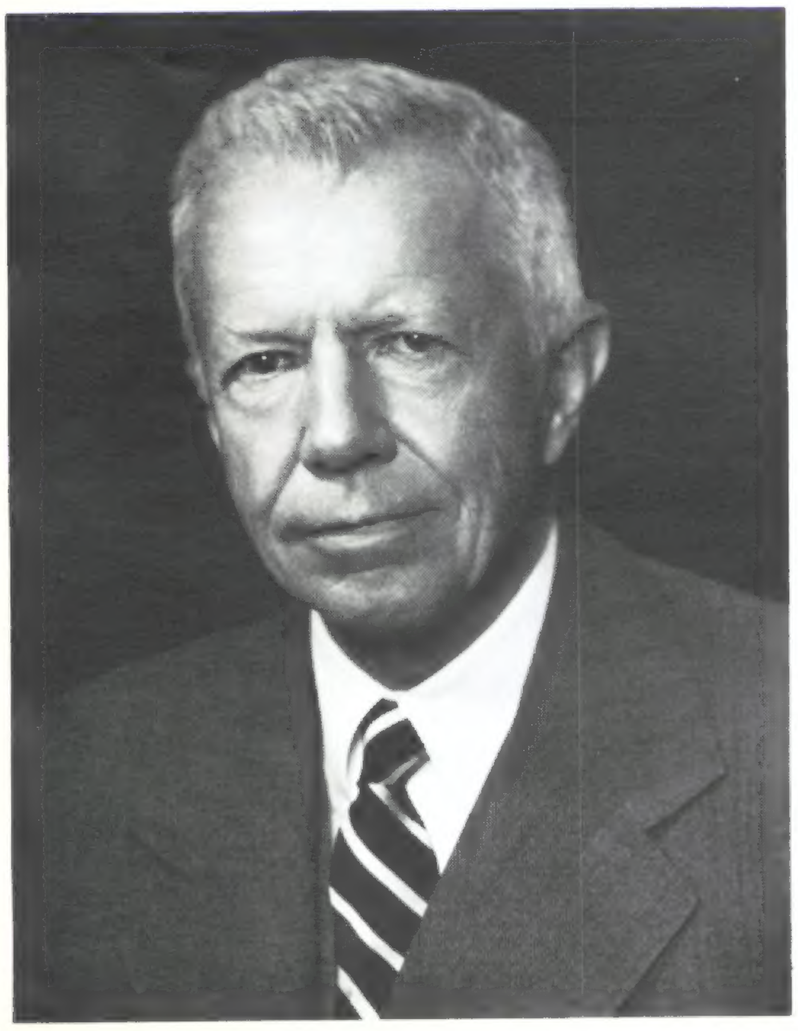
"We cannot ever be anything but what the earth tells us to be."

"We have been living in an age of lack of certitude and certainty . . . but let us clear the mist out of our eyes, let us take the sand out of our eyes, let us look at the sun in January . . . and let us remember in that moment, that supernal moment, the sun will be a little bit brighter every morning . . . birds are beginning to sing then because just as with ourselves, their enzymes, their endocrines, are beginning to tell them it is a new year . . . and it's going to be a better year.

"If we can think this sort of way and stop just listening and looking at the things that appear on television and in the press every morning, I know it's going to be a better year. If you ally yourselves to the soil, to the land, to what has made us great we cannot fail. So support this marvelous botanical garden which Henry Shaw helped to start, and support all the things for which we must think in our lives we are all about. [To have the chance to tell you] this is why I'm glad to be here tonight."

—S. Dillon Ripley

Garden Addition Named for John Lehmann



An addition to the north side of the popular Anne L. Lehmann Rose Garden will be named in honor of Mrs. Lehmann's late husband, John S. Lehmann. Located on the first terrace near the Shapleigh Fountain, the addition will be installed in late spring and will feature about 150 plants, primarily old-fashioned and ancestral roses (those that are ancestors to modern hybrids) and species, according to Alan Godlewski, Chairman of Horticulture at the Garden.

John S. Lehmann, whose life overlapped that of Garden founder Henry Shaw by three years (Mr. Lehmann was born in 1886; Mr. Shaw died in 1889), with his wife, Anne L. Lehmann, was a major force behind the Garden's survival and growth in the 1940s and 1950s, and was one of those responsible for the creation of the foundation for the tremendous growth of the Garden's facilities and services in the last two decades.

An attorney and Chairman of the Board of Petrolite Corporation (from 1953 until 1966), Mr. Lehmann was elected to the Garden's Board of Trustees in 1940. In 1953 he was elected as President of the Board and served in that position until December, 1957. Upon the retirement of George T. Moore, the Garden's Director from 1922 until 1953, Mr. Lehmann served as Acting Director of the Garden until mid-1954 when Dr. Edgar Anderson was appointed Director.

The John S. Lehmann Building, center of the Garden's active botanical research program, is named for him. He died in 1967.

For Younger Members

Winter Twigs

"This one has a *smile* on it!" exclaimed the small child, holding a bare twig she had found lying on the ground. The child had just discovered a leaf scar, that special spot where the leaf clung tightly until it drifted to the ground in autumn. And, indeed, the scar did look like a smiling mouth.

Leaf scars are only one of the many strange marks, lumps, and bumps that give bare twigs their characteristic appearance. The winter months offer the best time to look closely at bare twigs. See how many "smiles" you and your children can discover by sharing this activity.

You will need: Several bare twigs, found on the ground or carefully cut from a tree or shrub; magnifying glass; knife.

What to do: Gently feel the length of each twig. Does it feel bumpy? Look carefully at the bumps. Do they all look the same? Some bumps will be buds, closed tightly until spring. Other bumps will appear as swellings completely encircling the twig; these are called *nodes*. The space between two nodes represents the amount of twig growth which occurred during one year. Count with your child the number of nodes on the twig. Is the twig older or younger than your child? At each node, look for evidence of leaf scars. Do they look like smiles (or frowns)? Use the magnifying glass to locate tiny dots within the leaf scars. These dots are remnants of the tubes which carried water and nutrients (sap) into the leaves.

See if the twig has a large bud at the upper end; this is the terminal bud. What kind of covering does it have (hard, soft, fuzzy)? Using a knife, carefully open the terminal bud to see what is inside. Does it contain tiny, folded leaves? Flowers?

Place some freshly cut winter twigs into a vase of water and put them in a sunny window. Change the water frequently during a period of weeks. Watch for changes or swelling in the buds. Try twigs from forsythia, pussy willow, spirea, or redbud, cherry, or plum trees. By forcing winter twigs to blossom, you can have an early spring indoors!

—Ilene Follman, Education Consultant

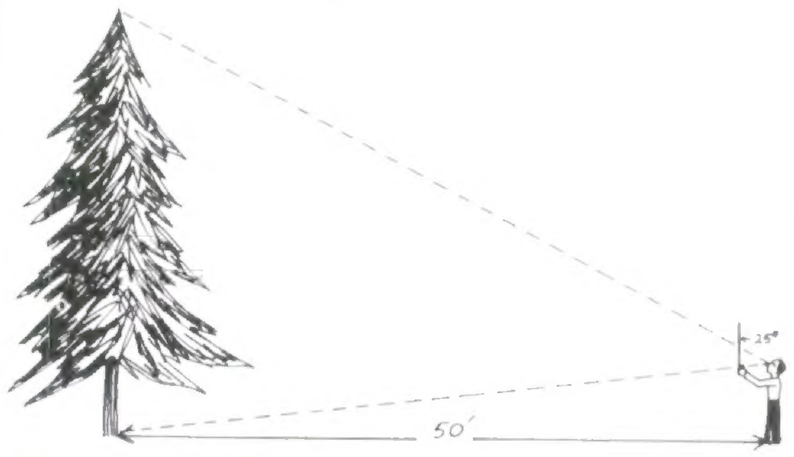
Bird Feeding

Mary Wiese, one of the Garden's guides, is an avid bird student. In a recent discussion about proper food for birds in winter, Mary offered the following suggestions:

Cardinals, nuthatches, etc., love the seeds of squash and melons. Just throw the seeds on the ground or put them into a flat feeder.

The mixed seed sold in grocery stores contains many seeds (milo, wheat) which only English sparrows and starlings eat. It is much better to buy straight millet and straight sunflower seeds from feed stores, such as Beckmann, O.K. Hatchery (Kirkwood) or others. There is also no need to roll feeding balls or pine cones in this small seed since the birds which eat it (juncoes, doves, cardinals, white-throated sparrows, etc.) cannot cling to the feeding balls.

Rather than using expensive peanut butter (which may choke a bird unless it is crunchy style or mixed with corn meal), try collecting beef fat from soup, hamburger cooking, or other cooking processes. Solidify the beef fat in the refrigerator, and then scrape it onto pine cones or against tree trunks.



How To Estimate the Height of a Tree

Take a yardstick and pace off a distance of 50 feet from the base of the tree. Turn, and face the tree. Grasp the yardstick between the fingers at a point about 2 inches from the zero end. Hold the stick straight up and down (parallel to the tree) exactly 25 inches from your eye. With the end of the yardstick even with the base of the tree, and without moving your head or the stick, measure the height of the tree in inches. Multiply the number of inches by 1.5 to get the tree's actual height in feet.

Example: measured height, 24" x 1.5 = 36 ft., actual height.

—Robert Herman, Education Department



Aloe

It's not a very pretty plant, but most everyone we know has one in his kitchen. It's the *Aloe*, also called medicine plant. If you know about *Aloe*, you also know that if you suffer a minor burn in your kitchen, you can break off the tip of one of its spikes and apply the clear ointment that oozes from the broken tip to your burn. Almost instant relief.

Long recognized as a home remedy for the relief of minor burns, cuts, and rashes, this desert plant has recently become the subject of tremendous commercial activity. This year's south Texas crop (where most *Aloe* is grown commercially in this country) will pass $20 million in value. Three years ago, the crop was only $3.3 million, according to an October 5, 1982, article in the *Wall Street Journal*.

Major cosmetic companies are now, or are preparing to, manufacture from *Aloe*: soaps, moisturizing lotions, face creams.

A drink, purported to control ulcers, is also made from *Aloe*.

In all, the *Journal* reported, there were 36 new products on the market in 1982 made from *Aloe*, as compared with an even dozen for the year before. The Food and Drug Administration has said that many of the medicinal properties attributed to *Aloe* by product promoters (some say it makes a good toothpaste for smokers, that it will cure acne, arthritis, and canker sores) are exaggerated.

But analysis at the University of Chicago showed that *Aloe*'s gel contains an aspirin-like compound and magnesium which worked together as a pain-reliever. It also contains triglycerides, which promote new skin growth.

Exaggerated or not, the claims are a boon to *Aloe* farmers, who sell leaves (which can weigh up to two pounds) to processors for eleven to fifteen cents a pound.

Large *Aloe* plants can be seen near the entrance to the Desert House at the Missouri Botanical Garden. Aloes for your own kitchen can also be purchased at the Garden Gate Shop's plant department.

Letter from Bolivia

We've managed to conduct quite a bit of fieldwork the past few months, especially in the lowlands. The northern part of Bolivia is beautiful Amazonian forest which has hardly been touched by botanists. Every collecting trip continues to bring in new records for the country. The collections from my first trip last September contained at least 29 genera and one family new for Bolivia. This material is still only partially identified, so I don't have a precise count of the new records from these collections.

Earlier this year two botanists, Mike Balick and Doug Daly, arrived from the New York Botanical Garden to make herbarium and seed collections of cusi (*Orbignya spp.*, Palmae), which has good potential as a source of edible oils and other seed products. This collecting trip was sponsored, in part, by an AID project to develop a germplasm center in Brazil for selecting strains with superior yields of oil. Besides oil, which is already extracted from wild stands of palms in Brazil and Bolivia, the meal residue from oil extractions is high in proteins and can be used as animal food, while the endocarp makes a high quality charcoal. The taxonomy of *Orbignya* is poorly known, so another objective of this trip was to obtain herbarium material of sufficient quality and quantity to shed some light on species delimitations. I traveled with them for two weeks in the area of Trinidad and Riberalta. In addition to the palm collections, we made general collections from those areas amounting to several hundred numbers.

For the past couple of months I have been planning and organizing a small book on the cultivated plants of La Paz. While this project is still in the development stage, I have already begun to assemble a special herbarium collection of cultivated plants for the Museo de Historia Natural. At a minimum the book will contain common names, scientific names, short descriptions, and keys to the species and major cultivated varieties. I expect it will cover about 300 species, but that is a very rough estimate at the moment. Discussions with a number of people have produced a consensus that a small book would be of great interest to many people in La Paz, since nearly every house has a garden of some sort, and no publication of this type exists.

—James C. Solomon, William L. Brown Fellow

Little Known Wealth: The Chocó

Ironically, the area which scientists think may be, botanically, the richest place on earth is also the most poorly known. Called the Chocó, it is located on the western edge of Colombia and northern Ecuador along the Pacific Ocean. Its area is approximately 100,000 square kilometers (about 62,000 square miles); by comparison, Missouri is roughly 70,000 square miles. Perhaps the wettest part of the world, the Chocó, in parts, has an average annual rainfall of just over 470 inches; the average for St. Louis is about 35 inches a year, though for 1982 the total was closer to 55 inches.

Partly because of this extreme amount of precipitation, which produces a climate unfavorable for exploration, and partly because the Chocó is not easily accessible, until recently little work has been done in studying the botany of the area. Currently the Missouri Botanical Garden is the only scientific institution outside of Colombia interested in extensive work in the Chocó.

For the last eleven years, Dr. Alwyn H. Gentry, a botanist on the Garden's staff, has been making annual explorations of the region. Each of his visits yields a substantial number of new plant discoveries, many of which have the potential of being extremely important economically or medicinally.

In a recent talk at the Missouri Botanical Garden he described some of these plants.

One of them, *Jacaranda hesperia*, is the closest known relative of *J. caucana*. Laboratory tests on the bark of *J. caucana*, performed at the University of Illinois, Chicago, showed that it yields a substance that "has exhibited anti-tumor and cytotoxic activity"—meaning it could be useful in the treatment of cancer. Because *J. hesperia* is so closely related to *J. caucana*, it too could have potential for the treatment of cancer.

Another plant, *Persea theobromifolia*, a tree of the same genus as the avocado, at one time was the most important timber wood for part of western Ecuador but it was unknown to scientists until it was described by Gentry five years ago. Only a handful of trees remain alive today, preserved in a field station. (The rest of the wet virgin forest in which the species once thrived was totally destroyed in the 1960s when the first road was constructed into the area.)

Gentry said that *P. theobromifolia* was an unusual species of the avocado genus.

Currently the avocado industry is having trouble with a root rot affecting commercial trees. The previously known sub-genus of *Persea* which is not susceptible to the disease is distantly related to the sub-genus from which the avocado crop is produced and therefore cannot be grafted with the commercial avocado.

P. theobromifolia, Gentry said, may be more closely related to the commercial avocado and can possibly be used in grafting to produce trees not susceptible to the root rot. This is currently being tested at the University of California—Riverside.

Another plant Gentry discussed was a species of *Fevillea*, a vine of the squash family. This vine produces seeds which are approximately 1½" in diameter. When these seeds are dried and burned, they produce a blue flame; this blue flame, Gentry said, was a clue that they are high in oil. *Fevillea* is now being analyzed at Washington University and its oil could prove to be extremely important economically.

Gentry also described several plants that are (or in the case of one, *were*) common as foods in the Chocó region but which are all but unheard of in North America.

One plant, a species of *Herrannia* of the Sterculia family, was once used by the Indians to produce a better tasting chocolate than that which comes from cacao. The plant is almost extinct today and occurs in the same forest remnant as *Persea theobromifolia*.

Another is borojó, a plant in the Rubiceae (the same family to which coffee belongs), used to make the favorite fruit drink in the Chocó; it is totally unknown in our own country.

Dr. Gentry is also engaged in research in Peru, supported by a U.S.A.I.D. grant, attempting to locate potential economic and medicinal plants there.

The January issue of National Geographic (circulation 13 million, world-wide) featured, as its lead article, a story about the tropics and their destruction. The Garden's work as a leader in the exploration of these areas and as an opponent to the massive deforestation currently occurring there was highlighted. The article contains an interview with Dr. Alwyn Gentry of the Garden's staff.

Business, School Leaders Join Garden Board

John K. Wallace, Jr., Chairman and Chief Executive Officer of Imperial Products Corp., and Penelope Alcott, President of the St. Louis Board of Education, have become members of the Board of Trustees of the Missouri Botanical Garden. Wallace was elected to the Board at its December meeting; Alcott is an *ex officio* trustee, by virtue of her position on the school board, under terms of the will of Garden founder Henry Shaw.

In addition to his responsibilities at Imperial Products, the nation's third largest manufacturer of charcoal briquets, Wallace is vice president of Dance St. Louis and chairman of the Pacesetters Division of the Arts and Education Council. He has also served as chairman of the Jerry Lewis Labor Day Telethon for Muscular Dystrophy and is a past treasurer of the Young Presidents Organization.

Alcott, who was elected to the city's school board in April of 1979, has served as Assistant Chairman and Chairman of the board's Governmental Affairs Committee. She was Vice President of the Board during the year prior to her election as President. She is one of six *ex-officio* trustees on the Garden's board. The others are the Mayor of St. Louis, the presidents of St. Louis University and Washington University, the Episcopal Bishop of Missouri, and the President of the St. Louis Academy of Science.



"Mr. Wallace brings to the board his significant insights on the cultural climate in St. Louis and a great deal of enthusiasm for the Garden," said Board Pres. C. C. Johnson Spink of John K. Wallace, Jr.



"The Garden serves the city on a much broader base than most people realize. It should be used by the families of our students as well as by students themselves because it offers tremendous learning experiences."

—Penelope Alcott

Nature Preserve Named for Engelmann

The Missouri Department of Conservation has named a 140-acre tract of land in honor of George Engelmann, father of the Missouri Botanical Garden's scientific program. The property, located in northern Franklin County, near St. Albans, Missouri, was purchased by the conservation department from the Garden in mid-summer, 1982. The department was interested in acquiring the property because it contains the best stand of riverine forest in eastern Missouri; they will preserve it as a natural area.

George Engelmann, a physician-botanist born in Frankfurt-am-Main, Germany, in 1809, immigrated to the United States in 1832, settling in the predominantly German community of Belleville, Illinois, across the river from St. Louis.

In his first three years in America, he made long, exploratory trips in his new country, investigating plant life, soil conditions, and water supplies. His last such trip was to the desert southwest, where he studied the cactus family. Although he spent the last of his money for that journey, even—he reported—selling his gun and horse to finance it, it paid him well.

He became recognized as the world's authority on Cactaceae.

In a recently published book, *Cacti of the United States and Canada*, author Lyman Benson said, "The great age of discovery in the United States was the time of George Engelmann . . . whose research on the cactus family is by far the best." Benson includes Engelmann as one of four scientists who developed North American botany, with Asa Gray, Thomas Nuttall, and John Torrey.

"Engelmann's work was the product of a keen, enquiring, well-trained mind and a sound, balanced judgement. As with Nuttall, Torrey, and Gray, he published remarkably sound work on the basis of only meager print material. [He] was a genius who could piece together scattered fragments of information into an amazingly well-organized whole. His insight has not been matched in later studies of Cactaceae."

In addition to his botanical studies, Engelmann was interested in meteorology and has been characterized as the pioneer meteorologist of the Mississippi Valley. His observations (made between 1836 and 1882) were published by the U.S. Weather Bureau.

Perhaps his most visible and important contribution for scientific posterity was his founding of the botanical research program at the Missouri Botanical Garden.

When Henry Shaw returned from his final European visit in the 1850s with an idea of opening a botanical garden in St. Louis, his plan came to Engelmann's attention. Engelmann suggested to Shaw that his garden should "include a program of research in addition to horticultural displays." With the assistance of Sir William Hooker, Director of the Royal Botanic Gardens (Kew), Engelmann convinced Shaw to create an herbarium and research facility. Shaw commissioned Engelmann to acquire specimens for the herbarium and books for a library.

After Engelmann's death in 1884, a professorship was endowed at Washington University in his honor. The first Engelmann Professor of Botany was William Trelease, who served as Garden Director from 1889 until 1912. Peter H. Raven, Garden Director since 1971, is the current Engelmann Professor of Botany.

CALENDAR

A Lot Happens at the Missouri Botanical Garden

Even if the weather is not the best outside, there is still a lot going on at Missouri Botanical Garden. During the next two months there are flower shows (of course), concerts, movies (would you believe a Marx Brothers' Festival?), two plays, and a poetry reading by one of America's most renowned women writers. Clip this page and post it to remind yourself of all we have to offer you. We hope to see you here often in February and March.

February *Tropical Getaway Month*

What is mid-winter like in St. Louis? Don't answer; we all know too well. But if it starts to get to you, get away from it in our Tropical Getaway Month. Standing beside a rushing waterfall in a tropical forest (the Climatron) who cares if it's five below outside?

FEBRUARY 1-5

Continuing: **Orchid Exhibit** (through February 27), Floral Display Hall, 9:00 a.m.-4:30 p.m. The entire world (well okay, maybe not. There *are* those two three-year-olds, in Stony Rapids, Saskatchewan) knows about our orchid collection and thinks it's tremendous. Come see it yourself this month.

FEBRUARY 6-12

February 11-13: **Groucho, Harpo, Chico**, A Marx Brothers' Festival to warm your funny bone. Two films for $2.00 (Members), $2.50 (Public). Ridgway Center, 7:30 p.m. on Friday and Saturday; 2:00 p.m. Sunday.

February 12-13: **Valentine's Day**—All Weekend. Warmth of a different sort. Visit the Garden on the weekend before this special day; what nicer time can you spend with your sweetheart than in the city's most beautiful garden? Special brunch for the occasion on Sunday, 2/13. Call 577-5125 for information.

February 12: **Children's Film:** *Walt Disney's Snowball Express*. Ridgway Center, 12:00-1:30 p.m. Of course, there are cartoons, too. $1.00 (Members), $1.50 (Public).

February 12: **Thread and Thimble Quilt Club Exhibit** (through February 20), Ridgway Center, 9:00 a.m.-4:30 p.m. We could say these are 25 examples of keeping warm turned into an artistic experience.

Continuing: **Orchid Exhibit**

FEBRUARY 13-19

February 18-20: **Theatre Project Co. presents** *Seahorse*—a romance called, by the *New York Times*, "a tender, wistful play." Ridgway Center at 8:00 p.m. on all three days. Call the Theatre at 531-1301.

Continuing: **Orchid Exhibit**
Thread and Thimble Quilt Club Exhibit

March *Spring Gardening Month*

Phew! *Another winter gotten through. Celebrate with us the coming of spring. Look especially at the classes we have to offer and check again your copy of our course brochure. Don't have/didn't receive one? Call 577-5140.*

MARCH 1-5

March 5: **Spring Flower Show.** Ah, Spring! Enjoy a walk through some early spring flowers (through April 3), Floral Display Hall, 9:00 a.m.-4:30 p.m.

MARCH 6-12

March 7: **St. Louis Symphony Chamber Chorus.** Ridgway Center, 7:00 p.m. If some poet didn't say that music put spring in the heart, one should.

March 12: **Children's Film:** *Walt Disney's Bambi*, Ridgway Center, Noon. The classic.

Continuing: **Spring Flower Show**

MARCH 13-19

Continuing: **Spring Flower Show**

MARCH 20-31

March 27: **River Styx P.M.** Adrienne Rich, National Book Award winning poet, reads from her work. Ridgway Center, 8:00 p.m.

Continuing: **Spring Flower Show**

COMING IN APRIL: Theatre Project Co. returns with another play: *Working*, based on Studs Turkel's best seller. Call the theatre for information.

Also: African Violet Show, a Spring Plant Sale, Carnivorous Plants, and, of course, more classes.

FEBRUARY 20-28

February 25-27: **Theatre Project Co.,** *Seahorse*
Continuing: **Orchid Exhibit** (last day February 27)
Thread and Thimble Quilt Club Exhibit (last day February 20)

Classes

Classes? Of course we have classes this Spring. Listed below are the titles of each class offered during March. The date indicated is the date of first meeting, the time, and also the number of sessions, if there are more than one. Need more information? Call the Education Department at 577-5140. (Saturday Morning Activities are for children with their parents.) (All classes meet in the Ridgway Center unless they are noted as being held at the Arboretum.)

March 3 **Planning Your Vegetable Garden** 7-9 p.m.

March 4 **Studies in Tropical Flowers** 10 a.m.-3 p.m.

March 5 **Saturday Morning Activity:** *Explore the Food Chain* 10-11:30 p.m.

March 9 **Self-Reliance: The Edible Landscape** 7-9:30 p.m. (3 meetings)

March 10 **Capture Nature in Art** 7-9 p.m. (4)
Starting Seeds Indoors 7-9 p.m.

March 12 **Saturday Morning Activity:** *Arts and Flowers* 10-11:30 a.m.
Birding Along the Mississippi 8 a.m.-2 p.m.
Art of Chinese Brush Painting 9:30-noon (3)

March 19 **Saturday Morning Activity:** *Grocery Store Botany* 10-11:30 a.m.
Pruning and Planting 9 a.m.-noon

March 21 **Lawn Maintenance** 7-9 p.m. (4)

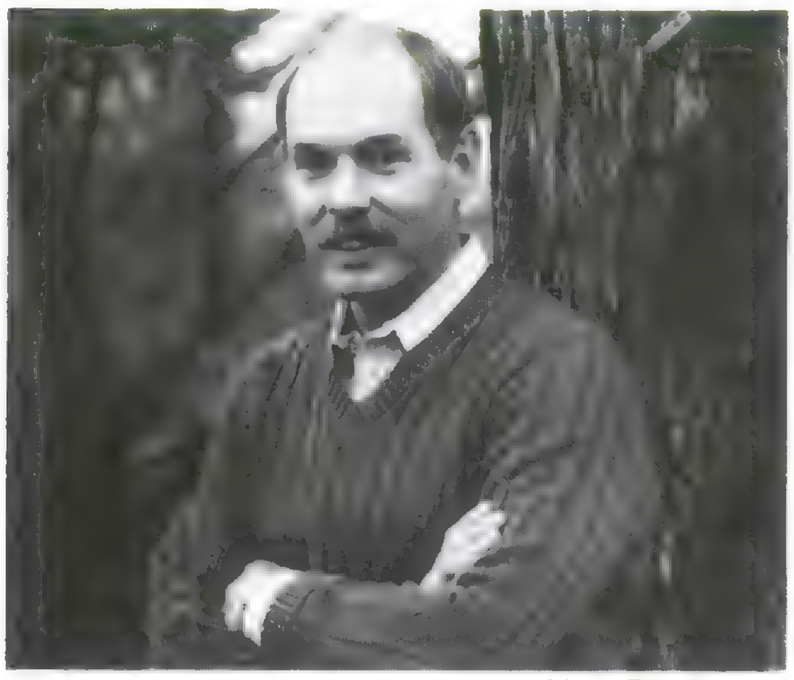
March 22 **Wildflower Walk** (Arboretum) 9:30-1:30 p.m.

March 25 **Night Hike** (Arboretum) 8-10:30 p.m.

March 26 **Saturday Morning Activity:** *Decorative Eggs* 10-11:30 p.m.
Home Orchid Culture 10-3:30
Composting Workshop 10 a.m.-noon
Prairie Restoration (Arboretum) 9 a.m.-3 p.m.

March 29 **Wildflower Walk** (Arboretum) 9:30 a.m.-1:30 p.m.

Garden Increases Service



Alan Godlewski



Steven A. Frowine

As part of its continuing efforts to provide the finest in horticultural service to the community, and beyond, the Missouri Botanical Garden recently announced the reorganization of its horticulture departments.

The departments of Landscape Horticulture and Indoor Horticulture have been combined into a single department of Horticulture. Alan Godlewski, Chairman of Landscape Horticulture since July, 1978, has been named Chairman of Horticulture.

Steven A. Frowine, formerly Chairman of Indoor Horticulture, has been named Public Horticulture Specialist. This is a newly created position; in it Frowine will provide information for print and broadcast media and for the public on horticulture. This new program of public outreach is the first large-scale program of its type for the country; Frowine is the only senior horticulturist among the staffs of the country's 150 botanical institutions to perform in this capacity full-time.

Garden Director Peter H. Raven said, "This reorganization will provide the opportunity to spread information about horticulture more widely to the general public than has been possible until now, and to publicize the Garden even more effectively. The outstanding performance by our horticultural staff, which has been improving year by year, will likewise be enhanced by the flexibility made possible by the new combination."

Garden Hosts Science Teachers

Science teachers from 43 area junior and senior high schools attended the first St. Louis Science Educators Symposium sponsored by the Garden's Education Department, November 5-7, 1982. Partially supported by the John L. Donnell Fund of the St. Louis Community Foundation and the St. Louis Metropolitan Teacher Center, the Symposium was designed to inform teachers of recent advances in science and technology and to provide them with related curricula and materials for use in their classrooms.

Keynote speakers challenged teachers to renew their commitment to their students—the decision-makers of tomorrow—and to their profession. Dr. Robert E. Yager, President of the National Science Teachers Association, assessed the problems in science education and charged teachers to look beyond the textbook for creative ways to make science an integral part of the classroom. Dr. Yager believes there is a 90% scientific and technological illiteracy rate in the United States today. "If, as Jeffersonian Democracy suggests, we are to have an informed electorate, then this is one of the fundamental problems facing society," Dr. Yager stated.

Dr. David M. Raup, Curator of Geology at the Field Museum of Natural History, provided teachers with current information on his research in the area of mass extinction, information which has only recently been published and which is generally unavailable to teachers at the present time. Dr. Paul F. Brandwein, Co-Publisher and Director of Research at Harcourt Brace Jovanovich, Inc., discussed techniques for identifying and encouraging the gifted student. Dr. Peter H. Raven, Director of the Missouri Botanical Garden, discussed the Garden's current program in tropical research and the social, economic, political, and biological ramifications of the destruction of tropical rain-forests.

The emphasis throughout the Symposium was on practical rather than theoretical approaches to teaching. Workshop instructors included master teachers from St. Louis as well as elsewhere in the country, and participants could select from workshops focusing on extinction and wildlife restoration, bioethics and environmental values, air pollution, microcomputers in the classroom, microscopy, and the theory and practice of Piaget learning.

—Judy Studer,
Chairman, Education Dept.

New Sister Garden



The Missouri Botanical Garden has recently inititated a sister-garden relationship with the Royal Botanic Gardens in Sydney, Australia. The association will allow the opportunity to both institutions for information, research, and staff exchange. One program currently planned is a New Caledonia Garden in Sydney which will contain plants from that island collected by scientists from both Gardens. The Missouri Botanical Garden has a botanist, Dr. Gordon McPherson, stationed permanently on New Caledonia.

Dr. Lawrie Johnson, Director of the Sydney garden, said, "I am delighted at the establishment of this relationship. We have long enjoyed friendly relations and scientific cooperation with Dr. Raven, and share many objectives embodying high standards and community service in scientific, educational, and horticultural fields."

Like the Missouri Botanical Garden, the Royal Botanic Gardens in Sydney is the oldest botanical garden on its continent, and was established in 1788 as a government farm by the first British governor of Australia. The Royal Botanic Gardens was created in 1816. It contains 75 acres and is surrounded by an 85 acre parkland.

Shaw's Garden also has a Chinese sister-garden, the Nanjing Botanical Garden.

Notes from the Garden

Part of the Garden's work in education is in the training of the scientists of tomorrow. For close to a century, the Garden has been working with local universities in their undergraduate and graduate-level botany and biology programs, and has close ties currently with Washington University, St. Louis University, University of Missouri–St. Louis, and Southern Illinois University–Edwardsville. Part of this work is also in providing post-doctoral opportunities for exceptional individuals who have recently received their degrees. These allow scientists to gain practical experience by working in the herbarium of one of the world's leading botanical institutions. . .



Dr. Cheryl Crowder is currently working in the Garden's herbarium as a post-doctoral fellow under the National Museum Act Curatorial Trainee program. She works with the Garden's unmounted temperate collections and the legume (pea family) specimens. She received her Ph.D. degree from Texas Tech University in 1982. . . . . .



Dr. Hendrik van der Werff is also serving a post-doctoral fellowship at the Garden, working on the identification of plants of the Lauraceae (laurel) family and of ferns. His Ph.D. degree is from the State University of Utrecht, The Netherlands. . . . . .



Chen Chia-jiu, a visiting researcher in the Missouri Botanical Garden herbarium, has just received an award for his contribution to Volume 7 of the *Flora of China*, according to a public announcement made by the National Science Committee in the November 2 issue of the People's Daily, the official newspaper of the People's Republic of China (PRC). This is part of the first major award event in three decades, the last one being held in the late 1950s. A total of 122 awards went to selected teams of scientists for their significant research and findings in the various fields of natural sciences including geology, seismology, nuclear physics, and botany. The issuing authority, the National Science Committee, is a government agency and the highest official administrative body for all the sciences in the PRC.

The *Flora of China* is an 80 volume publication on all the known plants of China. Our library holds all of the thirty-some volumes already published. The award-winning Volume 7 deals specifically with the conifers and was compiled by a group of botanists over a period of more than ten years, with Dr. Chen playing a major role.

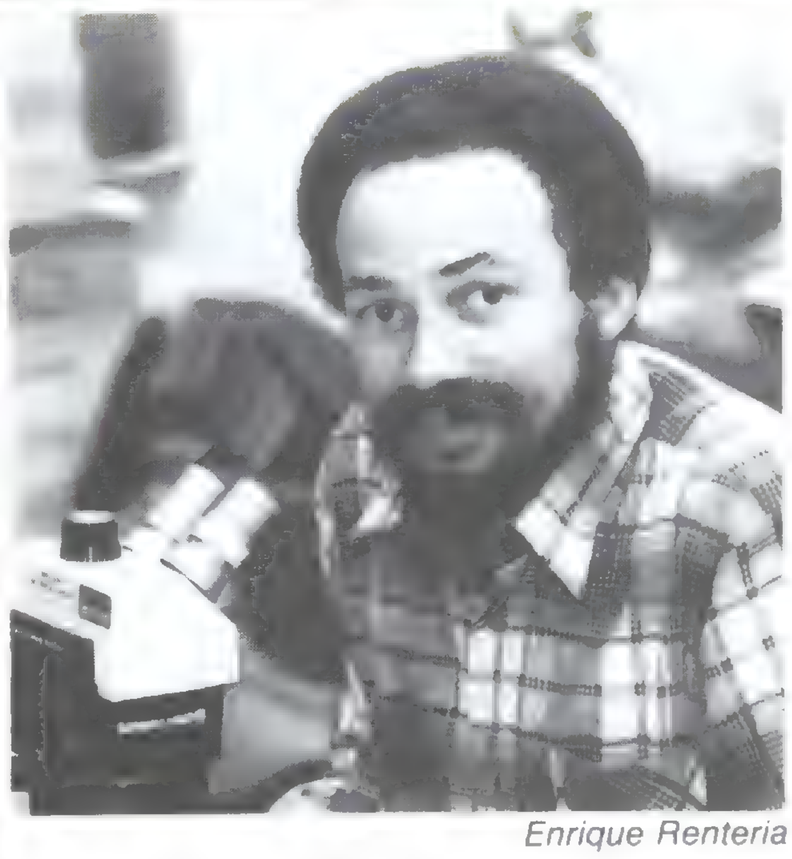
C. J. Chen has been on the staff of the Chinese Academy of Science's Institute of Botany, Beijing, for 21 years, during which time he has performed research on the Urticaceae (nettle) and Ulmaceae (elm) families of China. He is also one of the few botanists specializing in the systems of plant classification used in ancient China. C. J. Chen came to the Garden in November 1981, on Garden Director Peter H. Raven's invitation to collaborate in a joint revision of the Chinese species of *Epilobium*, a genus of plants that Dr. Raven and Dr. Peter Hoch, also of our Botany Department, have studied throughout the world. Dr. Chen will return to China in the early summer of 1983.

—W. L. Maria Chee
Missouri Botanical Garden Library



Dr. Mireya Correa

Among the many scientists who have visited the Missouri Botanical Garden's herbarium recently are Dr. Mireya Correa and Enrique Renteria. Correa, Curator of the Herbarium and Professor of Botany at the University of Panama and one of Central America's leading botanists, spent several months working at the Garden with Dr. William D'Arcy, editor of the Garden's recently completed Flora of Panama, developing a key for the identification of the flowering



Enrique Renteria

plants of Panama. She and D'Arcy are collaborating on a natural history of Panama which will be published later this year. Renteria, head of the herbarium at the Medellin Botanic Garden in Colombia and the most active field botanist in western Colombia, has had an active working relationship with the Garden for several years. On his most recent visit, he was preparing a monograph of the *Mauria* genus of the cashew family. . . . . .

Notes from the Garden



Lilla Tower, Director of the Institute of Museum Services, a federal agency that provides grants for operating support to museums in the United States, visited the Garden recently. The Garden has received the Institute's maximum grant for the last several years. With her are Garden Director Peter H. Raven (right), who is a member of the Institute's National Museum Services Board, and the Honorable John G. Tower, Senator from Texas. The Towers commented that they were impressed with the Garden's developments of the last few years, and especially with the Ridgway Center.



A. Timon Primm III, Emeritus Trustee of Missouri Botanical Garden, was honored recently with a national conservation award from the Nature Conservancy, a nonprofit conservation organization of 145,000 members nationally. Announced at the Conservancy's annual meeting this past fall, the award was presented to Mr. Primm for his leadership of the organization's Missouri Chapter and for his work in establishing the Missouri Heritage Program.

Mr. Primm, retired vice president and general manager of the Pulitzer Publishing Co., was a Garden trustee for 16 years and was named Emeritus Trustee in 1981. He worked principally on environmental issues and was instrumental in the 1970 expansion of Shaw Arboretum to its current size of 2,400 acres. . . . . .



George U. Wise, Superintendent of Shaw Arboretum since 1979, has been named Director of the Memphis Botanic Garden in Tennessee. "We will miss our friends in Missouri," Wise said. "I am grateful to have worked with a dedicated staff at the Missouri Botanical Garden and Shaw Arboretum who have developed the intriguing prairie project and some interesting educational programs."

The Memphis Botanic Garden is a tax-supported institution operated by the Memphis Park Commission. It was established in 1966 and includes a Japanese garden and an arboretum. The Garden also provides educational programs in horticulture. . . . . .

George Wise(r)with Arboretum visitors, 1981.

Many meteorologists are predicting a cold winter and there are some people in St. Louis smiling. The cross-country skiers who visited Shaw Arboretum last winter are hoping snow will cover the 1 mile, 3 mile, and 6 mile trails again this year. Last year, many skiers reported that they experienced the best skiing conditions in the area at the Arboretum.

Members ski for free. A reduced rate of $1.25 per person is charged to groups of 15 or more who call to request a discount. Groups of 40 or less can also rent the lovely stone and wood Adlyne Freund Education Center with its huge fireplace and modern kitchen for $250.00 a day. Call the Arboretum at 577-5138 for answers to your questions about skiing. . . . . .



Jo-Ann Klebusch Digman has joined the Garden's staff as Coordinator of Events. She will plan, develop, and coordinate Garden events and programs as well as events and meetings held at the Garden by other organizations. She received a Master's Degree in 1979 from the School of Social Service of St. Louis University and prior to joining the Garden's staff worked as Legislative Caseworker and Intern Coordinator for the Office of Senator John C. Danforth. She has also worked as a volunteer in Tower Grove House since October, 1980. . . . . .



Brassolaeliocattleya *Clarence Kelley 'Tower Grove' A.M., cultivated by the Missouri Botanical Garden, received an Award of Merit from the American Orchid Society during a juried-exhibit of orchids held at the Garden in late fall.*

There is quite a bit of news from the Garden Gate Shop this time. . . . . . .

The series of attractive Keith West Wildflowers of North America botanical prints will be available to Members at a special price during February and March. The six posters may be purchased at $10 for the complete set. This is a regular value of $30 for the set. . . .

During the Orchid Exhibit, the shop will feature a large selection of stunning orchids for sale, to Members, at a 20% discount. . . . . .

Brown-Jordan Outdoor Furniture is available to Members of the Garden at a 20% discount until March 28. Furniture may be ordered through the Garden Gate Shop and Members should allow six to eight weeks for delivery. . . .

There are still 11 months left of 1983, so it is still a good time to purchase the *1983 Flowers of the Missouri Botanical Garden Calendar.* Ordinarily $4.95, the calendar is available now for $3.50 each. . . . . .

This year, once again, Members will have the opportunity to order bulbs like those displayed in the Spring Flower Show. These can be ordered through the plant department of the Garden Gate Shop, and all orders will be sent to growers in Holland, from which the bulbs displayed in the show came. This opportunity is being extended again this year because of the popularity of the offer during the 1982 show. Reports from Members who purchased bulbs last year were that the bulbs were of exceptionally fine quality. . . . . .

When we think of spring, we think of tulips. When we think of tulips, we think of Holland. This spring, Members of the Missouri Botanical Garden have the opportunity to visit the *Garden Country of Europe*—Holland—during a fifteen day tour of Holland and Belgium.

Departing from St. Louis on April 25 and returning on May 10, the tour will visit the historic Botanic Garden at Leiden (one of the world's oldest, founded in 1587); Keukenhof, featuring the largest display of tulips in the world; the Hague; five castles (one of which tour members will spend the night in); and a medieval market place.

If you want this spring to be one you'll long remember, join the tour to Holland and Belgium. Call Foster Travel at 421-1787 for information. . . . . .

For the last ten years the Garden's library has been engaged in a project to recatalogue the holdings of its library. During that period of time, the Sunnen Foundation has provided generous support for the project.

The library of Shaw's Garden, one of the world's finest collections of works of botany, contains nearly 100,000 volumes, including 80% of all the literature on systematic botany ever printed. Already a major resource for scientists and science historians, the library will become even more accessible when the recataloguing project is completed. James Reed, the Garden's librarian, anticipates that, with the exception of a few collections of pamphlets on particular plant families and on plants of economic importance, the library's entire holdings will be recatalogued within the next two years. . . . . .

What does the Garden's increase of admission rates mean to Members? They save more money each time they visit the Garden: of course Members are still admitted free of charge. The new rates, for your information, are: Adults, $3.25. Children, 6-16, $1. The Family Rate is now $7.50 and tour groups of 15 or more are admitted for $2.25 for each person. . . . . .

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I certify that the statement made by me above is correct and complete.

(Signed) Joseph M. Schuster, Editor
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A Garden Party With Bobby Short

A Garden Party with Bobby Short, a gala benefit for the Ridgway Center of the Missouri Botanical Garden, will be held on Saturday, April 23. This is the first gala benefit staged at the Garden since the Chrysanthemum Ball of September, 1976.

Bobby Short, the featured entertainer for the Garden Party, has been called America's best-loved cabaret performer. He has been acclaimed for his concerts and his work both on and off-Broadway and is best-recognized as the singer-pianist in the Charley perfume commercials on television. His album, *Bobby Short Loves Cole Porter*, received a Record of the Year Award from *Stereo Review* Magazine in 1972 and was one of the best-selling records of that year.

The black-tie evening will be divided into two parts. Dinner (reservations are limited to 250 persons) will be held beginning at 6:30 p.m. in the Ridgway Center. The cost of $150 per person includes cocktails and a private performance by Bobby Short, as well as the after-dinner festivities. (Persons interested in being Patrons may contribute $250; Benefactors, $500.)

Beginning at nine o'clock, cocktails will be served and there will be a cabaret program by Bobby Short, dance music by Encore Orchestra, and (still later) an omelet breakfast prepared by the omelet king, Rudy Standish.

For those not attending the formal dinner earlier in the evening, the cost of the after-dinner festivities is $75 per person; 32 and under, $50 per person.

Chairpersons for this fabulous event are Mrs. Robert Hermann, Sr., Mrs. Walter Stern, and Mrs. Warren Shapleigh.

A coupon for reservations is found below. Because seating for dinner is limited, you should make your reservations as soon as possible.

PLEASE MAKE_____RESERVATIONS FOR:

MR. MRS. MS MISS _____

ADDRESS _____

CITY_____ STATE_____ ZIP_____

TELEPHONE _____

WE WILL BE ATTENDING:

6:30

Cocktails, Dinner and Private Show $150 per person. Price includes cabaret dance and breakfast. _____

I would like to be a Patron—$250 per person _____

I would like to be a Benefactor—$500 per person _____

9:00

Cabaret Dance and Breakfast $75 per person. _____

32 years and under—$50 per person. _____

I have enclosed my check for $_____

Charge my reservations for $_____

to my MasterCard #_____

VISA #_____

Expiration date _____

Contributions are tax deductible for income tax purposes in the manner and to the extent provided by law.

Make Checks payable to: **A GARDEN PARTY**
P.O. BOX 14216F
ST. LOUIS, MISSOURI 63150

BLACK TIE

Do you have some free time this winter? Why not volunteer at the Missouri Botanical Garden? Call 577-5187 for information. . . . . .

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Lecture schedule enclosed

Missouri Botanical Garden Bulletin

Volume LXXI, Number 2
April 1983
Includes Calendar for April/May 1983

The Garden Looks to the Future

The Garden has the capacity to profoundly increase the resources for science education in St. Louis and nationally if we have sufficient support.







This spring, voters will be asked to approve a measure that will provide tax support for the Missouri Botanical Garden, the world's only major botanical garden that does not receive direct tax support for its operations.

"With the completion of the Ridgway Center, the cornerstone of the master plan, the single most important task confronting us today is to put the Garden on a financial footing that will insure our prosperity for generations to come. The only way to do this is to obtain a base of local public funding." That is how Peter Raven, the Garden's Director, described the importance of the measure, labeled Proposition 4, which will be on the April 5th ballot in St. Louis City and County.

Proposition 4 will create a Botanical Garden Subdistrict in the Zoo Museum District and levy a 4 cents per $100 assessed valuation property tax to support the Subdistrict. The Zoo-Museum District currently funds the St. Louis Zoo, the Art Museum, and the Museum of Science and Natural History. Propositions 1, 2 and 3, which also appear on the ballot, provide for property tax increases for each of these institutions.

It is anticipated that the tax will provide about $1.2 million to the Garden—after deducting for some losses in revenue (admission prices, for example, will be reduced under the Proposition)—or about 20 percent of the Garden's nearly $5 million annual budget.

The funds would be used for much needed repairs and improvements and to support the Garden's public programs. "We have two challenges to meet that we cannot adequately fund now," Raven said. "First, major repairs. We operate on an extremely tight budget and do not have the resources to maintain our older buildings. Our production greenhouses are 70 years old, for example. The Desert and Mediterranean Houses (built in 1913) are in need of major repair. Even the Climatron, which is only 22 years old, is built on the foundation of the old Palm House which is 70 years old.

"Our other challenge is to provide more programs for school children, for families, and for senior citizens." The Garden is a major center for science and horticulture education for children and adults."

Each year, the Garden serves more than 50,000 people in

(continued on page 3)

Comment



When most people think of the Missouri Botanical Garden, they do not think of numbers but instead—and rightly so—of our horticulture displays, our many education programs, and our scientific research.

We ourselves usually describe our programs in terms of quality, not in quantity. Our primary goal is always to provide programs and displays of the highest caliber.

But I would like to—for the minute or so it will take you to read this—deal with our programs in quantitative terms.

During 1982, one-half million people visited the Garden more than 50,000 participated in our educational programs Over the past several years, the numbers of visitors and students have been increasing more than ten percent annually

Our budget, though, has been going up even faster. Inflation the last few years has taken a heavy toll, not only on us bu also on our contributors. Utility costs increase unrelentingly and we do require large amounts of energy in order to grow and maintain our plants. Our buildings are aging, and we have not been able to provide the preventive maintenance neces

(continued on page

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The **Missouri Botanical Garden Bulletin** is sent to every Member of the Garden as one of the benefits of their membership. For a contribution as little as $30 per year, Members also are entitled to: free admission to the Garden, Shaw Arboretum, and Tower Grove House; invitations to special events and receptions; announcements of all lectures and classes; discounts in the Garden shops and for course fees; and the opportunity to travel, domestic and abroad, with other Members. For information, please call 577-5100.

Postmaster: send address changes to P.O. Box 299, St. Louis, MO 63166.

The Garden Looks to the Future *(continued from page 1)*

its education programs. Students range from pre-school and kindergarten age to graduate students seeking doctoral degrees to senior citizens interested in continuing education.

"Although we serve so many students each year, we would like to be able to reach many more than we presently can," Raven said. "The next few decades are going to be increasingly oriented to science and technology. We at the Garden have the capacity to profoundly increase the resources for science education in St. Louis and nationally if we have sufficient support."

We do not have the resources to maintain our older buildings. The Garden is the only major botanical garden in the world that does not receive direct tax support.

The Garden, founded by Henry Shaw in 1859, is the oldest botanical garden in the United States and is a National Historic Landmark.

When Shaw died in 1859, his will specified that the Garden be "forever kept up and maintained for the cultivation and propogation of plants and devoted to the same and to the science of Botany, Horticulture, and allied subjects."

For the most of its first century the Garden operated almost exclusively on the funds provided by Henry Shaw's estate. Today, the endowment provides only 18 percent of the operating budget income. The Garden has greatly diversified its sources of revenue during the last 30 years.

"Our current support structure can be understood if you think of it as a pyramid. At the top is Shaw's endowment. Beneath it are the means of support we've added in the almost a century since his death. What we require now is a solid, financial base for the Garden's support," Raven said.

"We've increased and diversified our service in this last century and are a valuable part of the life of St. Louis."

Among botanical gardens today, the Missouri Botanical Garden is unsurpassed in the U.S. and ranks with the Royal Botanical Garden at Kew, the British Museum, and the botanical gardens in Geneva and Paris as the most important in the world.

C. C. Johnson Spink, President of the Garden Board, summarized it this way: "Henry Shaw had the vision of the Garden, and he provided support for the Garden to insure its prosperity. His vision has lasted a century and a quarter.

"Support through the Zoo-Museum District will insure the prosperity of the Garden for the next generations. Shaw had a great dream, and we want to continue it and insure the Garden's vitality in the years to come."



Gardening in St. Louis

New Plants To Try in Your Garden

Strawberries from Seed

A new strawberry hybrid called SweetHeart, which can be grown from seed, will be introduced to gardeners this year. It is an everbearing type which means it produces fruit from summer through fall. The more commonly grown strawberry is called a springbearing or Junebearing type (even though most of these produce fruit during May in St. Louis). This strawberry has much larger and more berries than the everbearing type. Springbearers are usually purchased as dormant plants in March or April. There are many good cultivars which do well in St. Louis. Two varieties which I highly recommend are Cardinal, developed at University of Arkansas, and Guardian.

Try growing some of these strawberries this year. In addition to having delectable fruit, these plants have attractive foliage which makes them an ideal ornamental border.

Miniature Fruit Trees for Containers

A new horticultural development is the genetic dwarf fruit tree. These miniature fruit trees grow to an average of 6 to 8 feet and can be grown in 24 inch tubs. They bear full-size fruit. Varieties which are available now are Sensation Peach, Sweet Melody and Honeyglo Nectarine, Golden Glow Apricot, and Compact Mac Apple. The peaches, nectarines, and apricots have beautiful foliage so they are very attractive for patio plantings since they provide colorful blossoms in the spring, attractive foliage in the summer, and fruits in the fall. Extra care should be taken in overwintering these plants in containers. Put them in an unheated garage, a lath house, or up against the northeastern side of the house where they are not exposed to much winter sun or wind.

Miniature fruit trees are available from Stark Bros. Nursery, Louisiana, MO. (toll free telephone number—1-800-392-0278). These trees are also sometimes available from local nurseries.

Super-Sweet Corn

Super Sweet or Extra Sweet Corn has been bred to contain a special gene, making the kernels sweeter and preventing the sugar in them from being converted to starch as quickly as in standard sweet corn varieties. Some people feel that the kernels of these varieties are not as creamy as the standard sweet corn; this was not apparent to my wife and me when we tried it last summer. We thought it was the best corn we had ever eaten!

To insure good pollination, I planted the corn in blocks of four to six rows, ten to 15 feet long. I planted some single and some double rows. Seeds should be planted about four to six inches apart and then the seedlings should be thinned to 10 to 12 inches apart to allow adequate room for each corn plant. You need about four ounces of seed per 100 feet of row. This length of row will yield about 100-125 ears of corn.

Since my soil was poor (I was using a vacant city lot), I had to fertilize frequently for better growth and yield. I used about three to four pounds of 5-10-5 fertilizer per 100 square feet of row applied at the side of the row at planting time. I sidedressed with a nitrogen fertilizer (Urea) at the rate of about ½ pound per 100 feet of row when the plants were eight to ten inches, and sidedressed again when the silks appeared.

To harvest fresh sweet corn on a regular basis, you can sow blocks of one variety at two-week intervals or sow blocks of several varieties with different maturing dates at one time. The soil should be 60-65°F when sowing the seeds. If it is much colder than this, many of the seeds will rot in the ground. In the St. Louis area you can sow sweet corn from mid-April to early July.

It is important not to plant Super Sweet varieties close to standard sweet corn varieties since they will cross-pollinate and the result will be reduced sweetness.

The exceptions are those varieties called Everlasting Heritage. They appear in the catalogs with the initials "EH" after the variety name. They will not cross-pollinate with other corn varieties and may be the best choice if you would like to have some of the Super Sweet and standard sweet corn planted close together.

To retain best flavor, boil Super-Sweet corn for four to six minutes.

The chart below shows how I rated each of the Super Sweet Corn varieties I grew:

Super Sweet Corn Varieties

Variety	Source	Approx. Days to Mature	Comments
Butterfruit	Park's	72	Yellow, crisp, very sweet, fruity. Excellent flavor—2-3 ears per stalk. My favorite.
Illini Xtra-Sweet	Many Sources	85	Good, sweet, flavor—tender kernels.
Kandy Korn (EH)	Many Sources	89	Yellow, not as sweet and crisp as Butterfruit—more starchy tasting.
Miracle	Stokes	82	Tender—somewhat starchy like Kandy Korn.
Sugar Sweet	Burpee	72	Small ear, short growth, quick maturity—very sweet, 2nd favorite to Butterfruit.
Sweet Time	Twilley	82	Good sweet flavor—vigorous grower—medium-size ear.
Tendertreat	Twilley	95	Large ear—vigorous grower—creamy, starchy—better than Kandy Korn.

—Steven A. Frowine, Public Horticulture Specialist

SOURCES

Burpee, W Atlee Burpee Co., 300 Park Avenue, Warminster, PA 18974; **Geo. W. Park Seed Co., Inc.**, Greenwood, S C 29646, 1-800 845-3366; **Stokes Seeds, Inc.**, 737 Main St., P.O. Box 548, Buffalo, N.Y. 14240, **Twilley Seeds Co., Inc.**, P.O. Box 65, Trevase, PA 19047.

Gardening in St. Louis

Hosta

The genus *Hosta* contains perhaps forty species of perennial herbaceous plants. The majority of the species are native to Japan, with a few species occurring in Korea and China. The genus itself was named in commemoration of Nicolaus T. Host, an eighteenth century Austrian physician, and was first introduced into culture in European gardens about 1790.

Hostas are hardy and thrive under light shade, which certainly makes them useful plants for many St. Louis gardens. A member of the Liliaceae, the lily family, *Hosta* was previously known as *Funkia*, which is still often used as a common name. A more apt and descriptive common name is plantain lily.

The leaves of *Hosta* resemble those of plantain, a common weed found in lawns throughout St. Louis, hence its common name. But, the similarity stops there, as hostas are a useful and ornamental garden plant deserving more attention in the St. Louis area.

Hostas vary in size from miniatures only a few inches tall to large plants 30 to 36 inches tall with leaves the size of rhubarb. In late summer, they produce long spikes, up to six feet tall on some species, of funnel-shaped flowers of lavender-blue or white. Some species have a pleasant sweet fragrance which is especially apparent at dusk.

The basic requirements of this diverse and interesting group of plants are rich soil highly amended with organic matter, regular moisture, and light shade. The prime enemy of the *Hosta* is the garden slug and/or snail which can be controlled by baiting or spraying with preparations specifically for slug control. They also need protection from hot, drying winds in the summer which can tatter the thinner leaved varieties.

Planting is usually done in spring or fall with the crown or top of the plant set just below ground level. Spring and fall are also the times that one undertakes division, the mode of propagation available to the homeowner. Most modern nurseries use the micro-propagation technique of tissue culture to produce greater quantities of some of the highly desirable cultivars of *Hosta.*

Hosta, valued mostly for its foliage, has leaves that are generally lance-shaped or heart-shaped with deeply impressed veins, giving the plant a very bold, textural appearance. The color of *Hosta* foliage is quite variable. It can be light chartreuse-green, glaucous blue-grey, dark green, variegated with white, or variegated in multiple shades of green. These traits make the *Hosta* a valuable addition to the heraceous plant pallet.

The following hostas are recommended for the St. Louis area:

Hosta decorata This species has white-margined, blunt-based leaves, and tall stalks of purple urn-shaped flowers in August. A good cultivar is "**Thomas Hogg.**"

Hosta fortunei One of the larger, more bold-leaved forms with a large number of cultivars, including "**Aurea,**" a beautiful form whose leaves are entirely yellow, fading gradually to green leaves broadly edged with white and grey beneath.

Hosta lancifolia With lance-shaped leaves of rich green and lilac flowers freely born on vigorous plants during the summer. There are several cultivars with white margins, one of which is "**Louisa.**"

Hosta plantaginea Has olive-green, heart-shaped, somewhat heat-resistant leaves with fragrant flowers in August. Two hybrid cultivars of note are "**Honey Bells**" and "**Royal Standard.**"

Hosta sieboldiana This species has large bluish or green heart-shaped leaves with lavender flowers in early summer. There are also yellow-leaved forms and variegated forms, the best known being the hybrid cultivar "**Francis Williams.**"

Hosta tardiflora This is a very distinctive plant. It is a diminutive species, with narrow, very shiny dark leaves and purple flowers in the autumn.

Hosta tokudama This species has blue-green leaves puckered like seersucker fabric and stalks of white flowers. It is a rather slow-growing species.

Hosta ventricosa This is a bold plant with broad heart-shaped leaves of rich dark shining green with wavy edges. The flowers are bell-shaped of deep violet, making an unmistakable impression in the shady border.

There is also a society for those who become infected with the *Hosta* bug. The address for those interested is:

Mrs. Olive Langdon, Secretary
The American Hosta Society
5606 11th Avenue
South Birmingham, Alabama 35222

For a list of *Hosta* resources send a self-addressed, stamped envelope with your request to:

Alan Godlewski, Chairman
Department of Horticulture
Missouri Botanical Garden
P.O. Box 299
St. Louis, Missouri 63166

—Alan Godlewski, Chairman of Horticulture

Many of the hosta species and cultivars will be on display in the new Hosta Garden, the garden area that has been developed between the Scented Garden and the Flora Gate along the east wall. The Hosta Garden will be planted this spring, and has been given in memory of Marie Schaeffer Shields by her children. A number of other hostas will continue to be featured in the English Woodland Garden, where they have delighted visitors during recent years.

Shovel, Hoe, Radio

Your radio is now one of your most important gardening tools.

Since mid-February, Steven A. Frowine, the Garden's Public Horticulture Specialist, has appeared twice monthly on KMOX-AM's "At Your Service" series, giving listeners horticultural information and solutions to gardening problems. Each program deals with a specific topic appropriate to the season.

For April and May, the schedule is:

Thursday, April 7: *Spring Lawn Care* 2-3 p.m.
Saturday, April 16: *Annual & Perennials* 1-2 p.m.
Wednesday, May 11: *Tomato & Other Warm Growing Vegetables* 3-4 p.m.
Saturday, May 21: *Shade Plants* 3-4 p.m.

KMOX is at 1120 on the A.M. dial.

Science Notes

Southern African Mosses

For the last six and a half years, Dr. Robert E. Magill, Assistant Curator of Bryophytes at the Missouri Botanical Garden, has been working on a moss flora of Southern Africa. Recognized as the world's leading authority on Southern African mosses, Dr. Magill has completed two of the planned four fascicles for the project which is part of an overall flora of the area. Completion of his project, the first major moss flora of the African continent in almost half a century, will be extremely important to scientists' understanding distribution patterns and evolutionary trends for both African and Southern Hemisphere mosses. Of the 600 to 700 species of mosses Magill expects to find in southern Africa, an area about the size of Texas and New Mexico combined, about a third will be species found to occur naturally no where else in the world.

While a recent catalogue lists more than 15,000 separate publications dealing with African bryophytes (the class of non-flowering plants including mosses and liverworts, the word coming from the Greek *bryon* moss—and *phyton* plant), most are out-of-date and have no illustrations or keys to aid identification. Because none are comprehensive, even routine specimen identification requires time-consuming research. Magill's flora will provide scientists with a reliable tool for identification of all known mosses of southern Africa as well as for many found in parts of central and eastern Africa.

The need for such a comprehensive study on Southern Hemisphere mosses is especially important at this time because of increasing demands on the land there by lumbering, mining, agriculture, and highway construction. These enterprises are quickly displacing the natural areas and there is no trend toward reversal.

Through this project, the Garden (one of the world's leaders in the study of mosses) will continue its cooperation with the Botanical Research Institute of Pretoria.

The "Useless" Moss

When we spoke with Dr. Robert E. Magill about his Moss Flora of Southern Africa (see above), we asked him why a scientist would study mosses: aside from sphagnum (peat moss) and aside from helping a Boy Scout locate north in a woods, they seem to have no practical use.

While Dr. Magill agreed that they have little apparent use, he said that scientific investigation cannot be restricted only to subjects which may fit a utilitarian criterion. First, something that seems useless today may be found to be extremely valuable later. Second, he said, mosses are "an integral part of the flora of an area. You can't study the flora and fauna of an eco-system and not study all of it.

"Mosses are a primary element of many eco-systems. They are important for retarding soil erosion. They also form seed beds for other plants because they hold a lot of water and soil. Mosses participate in the breakdown of rock and organic matter, such as leaves and bark, which supply nutrients for other plants."

Magill also listed three reasons scientists are interested in studying mosses at this time.

They are important in the detection of air pollution, he said. "Mosses are very sensitive. Their leaves are mostly only one cell thick and so have no protection against pollution.

"They are also used in detecting soil minerals. Because they draw minerals from the soil we can determine what is present in an area from examining them.

"Third, mosses are also valuable in the study of dessication [drying] and drought resistance in plants. They can survive long periods of drought; they dry up very quickly when they are deprived of water but they do not die. If scientists can isolate what gives them this characteristic and can introduce this into other plants, we could protect some crops from severe damage because of drought."

Notes on Cameroon

The Missouri Botanical Garden recently initiated a research project in Cameroon when it sent Dr. Duncan W. Thomas to reside and work in that country. The world's most active center for studies in tropical botany, the Garden now has full-time staff members residing and researching in Panama, Bolivia, New Caledonia, Nicaragua, Colombia, and Peru, in addition to Cameroon. Dr. Thomas, a Research Associate with the Garden since December, 1980, received his Ph.D. degree from University College of North Wales in the United Kingdom. Following this, he performed field work in tropical Africa, including Cameroon.

Cameroon, located on the western coast of Africa a few degrees north of the Equator, is just over 180,000 square miles in size. This is a little more than two and one-half times the size of Missouri. The geography ranges from a low coastal plain with rain forests in the south to forested mountains in the west and grasslands in the north.

We will be concentrating our work in the large forest reserves of southwest Cameroon, in particular Korup and Ejagham Council reserves. A committee of the U.S. National Research Council has identified the Cameroonian forests as the most species-rich in Africa. Economic pressures in recent decades have caused the loss of natural areas there as in the tropics in general. Even on land set aside for forest, the need for economic timber often leads to the replacement of diverse natural ecosystems with monocultures. As a result of this a large number of species will soon become extinct.

Historically, American botanists have shown little interest in the flora of tropical Africa. As the North America Repository for African Collections, it is logical for the Missouri Botanical Garden to take a lead in this project.

For several reasons, the rain forest ecosystems of Cameroon offer unique research opportunities. Tracts of little-disturbed forest still exist, including some of the most floristically diverse in Africa. The government is in the process of establishing large national parks in some of these least disturbed areas, where long term research projects will be welcomed.

These factors suggest that work in the Cameroonian forests will make important contributions to the emerging picture of African rain forests. Our work will form an important basis for future scientific researchers from many disciplines.

We anticipate extensive collections in two important plant families, the Euphorbiaceae (spurge) and the Sterculiaceae, which includes the cacao tree, *Theobroma cacao*. Cacao is one of the most important economic plants of Cameroon; many species of Euphorbiaceae are important components of mature rain forest in Cameroon.

In our work we will be collaborating with the *Herbier National Camerounais* and also working with the *Flora du Cameroun* project, centered at the Laboratoire de Phanérogamie, Muséum National, Paris. We will be contributing material on the Euphorbiaceae.

—Dr. Duncan Thomas, Assistant Curator



Dr. Krukoff (r) receiving 1981 Shaw Medal from C.C. Johnson Spink.

B. A. Krukoff 1898-1983

B. A. Krukoff, an important benefactor of systematic botany, died on January 19, 1983. Born in Kasan, Russia, on July 20, 1898, he arrived in the U.S.A. in 1923. He graduated from Syracuse University in forestry in 1928 and spent most of his professional career with Merck and Co. (now Merck, Sharp and Dohne) working with plants as sources of various drugs, including anesthetics, anti-malarials, anthelmintics, and cortisone.

Between 1928 and 1955, he led numerous botanical exploration expeditions to South America, Africa, and Sumatra. The principal aim of these explorations was the discovery of potentially useful plants. Over 100,000 sheets of herbarium specimens were collected, together with about 4,000 wood samples.

Aside from his work with Merck, he carried out extensive research in systematic botany, often in collaboration with others. His concentration was on the American species of *Strychnos* (the genus including Strychnine) of which he described 25 new species, the Menispermaceae (the Moonseed family, many members of which, like Strychnos, yield alkaloids) of which he described four genera and 11 species, and *Erythrina* (a genus of the pea family) of which he described 28 species. He was the author or co-author of about 70 publications, and organized a series of four symposia on *Erythrina*.

In 1928 he began a long association with the New York Botanical Garden, serving as honorary curator from 1940 to 1948 and again from 1970 until his death. In 1970 he received a Distinguished Service Award from New York. The Missouri Botanical Garden awarded him the Henry Shaw Medal in 1981.

The Krukoff Curatorship of African Botany at Missouri Botanical Garden (held by Dr. Peter Goldblatt) was endowed by him, and he also supported various botanical studies at Kew, Leiden, and Missouri.

—Marshall R. Crosby,
Director of Research

The Garden Library

Founded in 1859, the Garden's library is the oldest botanical library in the United States and among the five largest such libraries in the world. With collections of over 400,000 items, the library supports the research activities of the Garden's botanists, students, and research associates by providing the necessary scientific literature and related information services. It holds an estimated 80 percent of the world's printed literature on systematic botany, from the 15th century to the present. In addition, the library maintains rich collections in the other plant sciences, including botanical history, plant ecology, horticulture, gardening and economic and medical botany.

As well as having these rich collections of published scientific literature, the library has nearly 200,000 non-book materials, including maps, manuscripts, photographs, archival records, and botanical art and illustration. These non-book collections serve as valuable scientific, historical, and geographical resources for researchers investigating the plant kingdom.

The library's collections are available through personal visit and by interlibrary loan. The bulk of the library's holdings is only available for use within the Lehmann Building, but a small circulating library of books on gardening and horticulture is available for borrowing by Members of the Garden.

In 1982, 300 institutions from 47 states and 22 foreign countries borrowed materials from the Garden's library.

Among the important special collections in the Garden's library are the Sturtevant Pre-Linnean Collection (about 1,000 volumes on botany and natural history published between 1474 and 1753) and the Linnean Collection (about 1,800 volumes by and about the great Swedish naturalist who established the system of Latin names still used for plants). In addition to these two collections of early botanical literature, the library also contains the William Campbell Steere Bryological Library of 1,000 volumes and 6,000 published papers on mosses, liverworts and their relatives.

In an effort to preserve the physical condition of the materials in its care, the library maintains an in-house book bindery/book restoration unit to repair and restore the older and more fragile books and papers in the collection. On a limited, fee-for-service basis, the skills of the Garden's book restorers are utilized by other libraries in the St. Louis area. The Garden's bindery also provides occasional classes and workshops for those interested in bookbinding, paper marbling, and related crafts.

Since 1970, the cataloguing staff of the library has been recataloguing the collections of books and periodicals, and since 1977, these cataloguing records have been put into a nationwide computer data bank (OCLC, INC.) to share with more than 3,000 other libraries in this country and abroad. Until this project is completed, researchers should check both the new and the old card catalog to determine if the library has the literature they require. Since most of the library has been recatalogued, it is advisable to look first in the new card catalog (distinguishable by yellow labels on the drawer fronts).

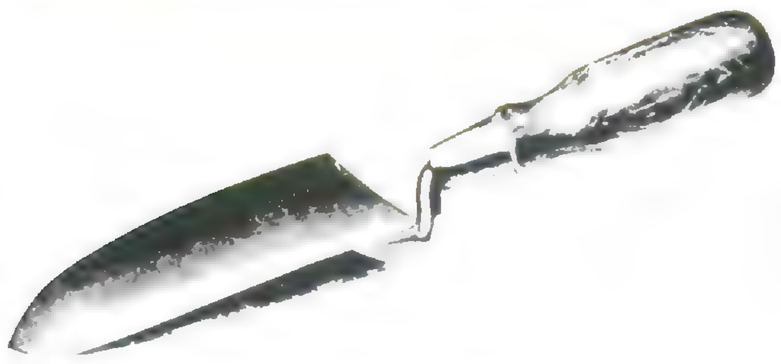
The library is open for research use from 8:30-5:00, Monday through Friday. Members of the Garden and the adult public are welcome to use the library, but are requested to call in advance.

—James Reed, Librarian



For Younger Members

In A Shovelful of Soil...



April and May are the months when St. Louisans "dig in," preparing planting beds and setting out plants. Discover what soil is made of as you and your child "dig in" together.

You will need: Small hand trowel or large, sturdy spoon; shallow box lined with plastic; newspaper; magnifying glass.

What to do: Select the planting area in which you and your child will work. As you begin to dig in the soil, talk with your child about how the soil looks and feels. Is it wet? Is it crumbly? What color is it? Look for soil particles, such as rocks, sticks, roots, leaves or seeds. Does your child recognize any of these? Are there any live creatures in the soil? What are they? Observe their movements.

Spread some of the soil out on an old newspaper and look at it carefully with the aid of a magnifying glass. What more can your child see? Recognize? Shovel some soil into the plastic-lined box. Gently water the soil in the box and leave it in a sunny location. If seeds are present in the soil, small plants may begin to grow. Keep the soil moist and observe what happens to it over a period of days.

Just for fun, dig up a spoonful of soil somewhere else in your yard. Does it have the same appearance as the soil which is in the box?

—Ilene Follman, Education Department

Award to Garden for Education of Children



With Peter H. Raven is Mary Miehaus, Vice-President of the St. Louis Association for the Education of Young Children.

Dr. Peter H. Raven, Director of the Garden and initiator of progressive Garden educational programs with more than 50,000 participants each year, was the first recipient of the "For the Love of Children" award presented by the St. Louis Association for the Education of Young Children (SLAEYC).

Serving the educational needs of young children, the SLAEYC is a branch of a national association of 600 organization members devoted to developing early childhood education and voicing the needs of young children. The award honors those in the community who are dedicated to providing effective ongoing educational programs for young children and creating new avenues for childhood development.

The Garden has been instrumental in developing early childhood educational programs for thousands of children who visit each year. The Garden's Education Department sponsors classes to develop young children's interests in nature, and provides self-guided tour packets for group hikes through the Garden. Children under the age of 6 also receive free admission to the Garden to encourage more frequent visits; the Garden hosts a series of Saturday morning activities for young children and their parents.

Closing Event—Week of the Young Child

During the week of April 17-23, the St. Louis Association for the Education of Young Children (SLAEYC) will celebrate the Week of the Young Child. The Garden will host the closing event of the week on Saturday, April 23, 9:30 a.m.-2:00 p.m. Activities, ranging from performances to puppetmaking will be in store for children ages 3-7. Admission to the Garden on April 23 will be free for families who are accompanied by children under the age of eight. Take advantage of this opportunity to share a special experience with your young children in the Ridgway Center and throughout Garden grounds.

In celebration of this Week a special Sunday Brunch for Children has been planned for the following day, April 24, from 11 a.m.-1 p.m.

Notes for Younger Members

For the last year and one-half we've been publishing special features for younger members. If you've enjoyed those, watch for our June, 1983, issue. The *Younger Members* page will have a new look and will also be expanded to include more information and activities. . . . . .

Speaking of activities, a reminder that *The Collector's Bag* gives young visitors a chance to explore nature in the Garden by collecting leaves, twigs, rocks, and other objects from the ground. Check at the ticket counter for bags and instructions. . . . . .

Even more activities are planned for school children of all ages who want to make this summer an exciting, educational one. Watch for *Summerscape* in your mail; it lists 15 classes and workshops planned for you this summer at the Garden. . . . . .

Finally, a new map of the Garden will soon be on sale. Called the Discovery Map, it shows places in the Garden of special interest to our Younger Members. Look for it early this summer. . . .

'Til next time, The Education Department

Comment

(continued from page 2)

sary to keep them up to par.

In order for us to continue providing high quality programs and services for all our visitors, for senior citizens and the disabled, for students—and for the countless people we reach indirectly but who never visit here—we need to gain a new financial base. We are certain that the creation of the botanical garden subdistrict of the Zoo-Museum Tax District is the best means of providing this underpinning of support. Under the property tax proposed to support the subdistrict, which calls for a tax of 4 cents per $100 assessed valuation, a property owner with a $75,000 home (fully assessed) would pay just $10 more per year in taxes.

The Garden is a vital part of the quality of life in St. Louis. We urge you to vote YES on Proposition 4 and to help us continue serving our community to the best of our ability.

Peter H. Raven

CALENDAR

While you're making your Spring Chore list, add a "thing-to-do" for yourself. Somewhere among the items which read, no doubt, "Paint trim," "Till garden," or "Wax car," note: "Visit Garden." With all you *have* to do, you owe yourself something for you. And we have a lot going on. Clip this page and post it; circle the items you want to remember, and then come to the Garden: do something nice for yourself this Spring. (And, oh, don't forget our classes, either.)

April

St. Louis' own Thomas Stearns Eliot may have said "April is the cruelest month," but if he ran his eye down our calendar for the month, he might have changed his mind.

APRIL 1-6

April 1-3: **Working:** a play by Theatre Project Co. Ridgway Center, 8 p.m. on all days, and 2 p.m. matinee on 4/3. A play with music based on Studs Turkel's book: a celebration of the American way of work-life. Call the Theatre for information.

April 2: **Easter Egg Hunt.** Garden Grounds, 1 p.m. Children from 1 to 10 are invited to, well, like the name, hunt Easter Eggs. A coloring contest is planned, as well as a visit from T. Easter Bunny. (T., of course, short for his first name, The.)

April 3: **Easter Sunday Brunch.** Gardenview Restaurant, 11 a.m.-1 p.m. The perfect meal: the food is good, you don't have to fix it, we wash all the dishes.

April 5: **Election Day:** Your local poll, 6 a.m.-7 p.m. Vote for Proposition 1, 2, 3, 4.

APRIL 7-10: **Working** (same as above, except no Sunday Matinee)

April 9: **Arbor Day Celebration.** Garden grounds, 12:15 p.m. We'll read the winners in the essay contest. Plus, free tree seedlings to the first 1,000 visitors.

April 9-10: African Violet Society Show, Ridgway Center, 9 a.m.-5 p.m.

APRIL 10-16

April 14-15: **Spring Plant Sale for Members.** Garden Gate Shop, 9 a.m.-6 p.m. Save 20% on everything in the Plant Sales Department.

April 16-17: **Spring Plant Sale Open to Public**

APRIL 17-23

April 23: **Week of the Young Child Celebration.** Ridgway Center And Grounds, 9:30 a.m.-2 p.m. All sorts of things for the Young and the Young at Heart.

April 24-30: **Children's Brunch.** Gardenview Restaurant, 11 a.m.-1 p.m. What's Cooking? Bring your children or grandchildren and find out.

Flower Sunday. Christ Church Cathedral, Downtown; the 94th annual celebration of God's Green Earth.

April 24: **Carolyn Forche/River Styx P.M.** Shoenberg Auditorium, 8 p.m. A reading by the recipient of the coveted Yale and Lamont prizes for poetry. Call 725-0602 for information.

April 30: **Carnivorous Plants Exhibit.** Climatron, 9 a.m.-5 p.m. and 10 a.m.-7:30 p.m. beginning on 5/1. We have representatives of all of the known genera of carnivorous plants. Only, be careful around feeding it.

Children's Movie: *The Love Bug* (Disney), Shoenberg Auditorium, noon. Even if you're not a child, you can still come.

May

Grammar Lesson: For those in school, there's only a little more than a month left, but here's a lesson on VERBS for May. Namely, verbs you can experience at the Garden. Listen *(Music, poetry)* Run *(a race)* Save *(Money in a plant sale)* See *(a movie)* Eat *(ice cream)* Smell *(roses) and some others:* Stroll, relax, enjoy.

MAY 1-7

May 1: **Garden open until 7:30.** Tough day at work, at home, in general? Come on down to the Garden and, *Ahhhhh!* Everything's alright.

May 5-6: **Members' Herb Sale.** Floral Display Hall, 9 a.m.-7:30 p.m. Save 20% on more than 15,000 plants to spice up your life.

May 7: **Children's Film:** *20,000 Leagues Under the Sea.* Shoenberg Auditorium—Noon. Watching this, you'll not forget to water your garden for a *long* while.

May 7-8: **Herb Sale Open to the Public**

Ice Cream Social. Grounds, 1-4 p.m. Entertainment and Ice Cream, ice cream, and ice cream (You expected, maybe kumquats?)

Continuing: **Carnivorous Plant Exhibit**

MAY 8-14

Continuing: **Carnivorous Plant Exhibit**

MAY 15-21

May 15: **Mothers Day.** Repay your mother (in part, anyway) for all those years: bring her to the Garden. There's Sunday brunch and a stroll through the nicest place this side of Eden.

May 21: **Horticulture Society Show.** Ridgway Center, 9-7:30 p.m.

Continuing: **Carnivorous Plant Exhibit**

MAY 22-31

May 22: **Shaw Neighborhood Run.** It begins in the Garden's parking lot and goes through one of St. Louis's best neighborhoods. Call 664-2011 for information.

May 23: **St. Louis Symphony Chamber Chorus Concert.** Ridgway Center, 8 p.m. Music and spring: What more does a spirit need? Call the Symphony at 533-2500 for information.

May 28-29: **Rose Society Show.** Ridgway Center, 9 a.m.-7:30 p.m. We don't know what Linnaeus would say, but Wm. Shakespeare said, "A rose by any other name would smell as sweet."

Continuing: **Carnivorous Plant Exhibit** (last day, May 30)

Classes

(Date indicated is the first meeting. Number in parentheses after class title is the number of meetings, if there is more than one. Saturday Morning Activities are for children and their parents.) Consult your Spring Course brochure for further information. Need one? Need help in registering? Call the Education Department at 577-5140. All classes are at the Garden's Ridgway Center, unless they are noted as occurring at the Arboretum.

April 2
Composting Workshop 10 a.m.-noon

April 5
Ground Covers in the Landscape 7-9 p.m. (3)
Wildflower Walk (Arboretum) 9:30-1:30

April 9
Saturday Morning Activity: *Trees for Arbor Day* 10-11:30 a.m.
Missouri's Birds (Arboretum) 9 a.m.-3 p.m. (2)

April 12
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

April 16
Saturday Morning Activity: *Exploring Photography* 10-11:30 a.m.
Soil Preparation and Planning 9-11 a.m.

April 19
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

April 20
Herbs: Uses and Culture 9:30 a.m.-2:30 p.m.

April 24
Spring Flowers of the English Woodland 2-4 p.m.

April 26
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

April 27
Evening Walk in the Japanese Garden 6-8 p.m.
Growing without a Garden 7-9 p.m. (2)

April 29
Night Hike (Arboretum) 8-10:30 p.m.

April 30
Saturday Morning Activity: *Meet the Honeybees* 10-11:30 a.m.

May 3
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

May 5
Floral Arrangement 1-3:30 p.m. (5)

May 7
Saturday Morning Activity: *Corsage for Mothers' Day* 10-11:30 a.m.

May 10
The Garden In Watercolors 9 a.m.-noon (6)
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

May 14
Saturday Morning Activity: *Your First Garden* 10-11:30 a.m.
Spring Bird Walk 8:30 a.m.-noon

May 17
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

May 20
Night Hike (Arboretum) 8-10:30 p.m.

May 21
Saturday Morning Activity: *Fun With Herbs* 10-11:30 a.m.
Transplanting and Seeding 9-11 a.m.
Nature Photography (Arboretum) 9 a.m.-3:30 p.m. (2)
Plant Communities of Missouri (Arboretum) 10 a.m.-2:30 p.m.

May 24
Wildflower Walk (Arboretum) 9:30 a.m.-1:30 p.m.

May 26
Evening Walk in the Japanese Garden 6:30-8:30 p.m.

May 28
New Harmony Tour (two days)
Plant Communities of Missouri (Arboretum) 10 a.m.-2:30 p.m.

May 29
Pick a Rose 2-4 p.m.

Jill Mead To Manage Gardenview Restaurant



Jill Mead

The Garden is pleased to announce that Jill Mead, a popular St. Louis restaurateur, has assumed the management of the Gardenview Restaurant in the Ridgway Center.

Miss Mead brings to the Garden her reputation of excellence for food service in the metropolitan area. The menu includes weekly specials and Miss Mead's famous soups. A different soup will be offered each day; there will be close to 35 different soups.

The menu also features: *Mediterranean Lunch*—Soup, Cheese and wine. *Chicken salad* on home-made white; *Herbed Egg Salad* on whole-wheat; *Smoked Turkey* with Russian dressing on Pumpernickel; *Grilled Cheddar, Swiss and Tomato* on Pumpernickel; *Rare Roast Beef* on French bread; *Hamburger, Cheeseburger, Children's Bag* (#1 Hot dog, Chips, Cookie; #2 PBJ, Chips, Cookie). *Salads*—Chef, both large and small; *House vegetable*—also large and small; *cheese and fruit plates; fresh fruit desserts; sorbet; ice cream specialties; pastries; tropical shakes* (Sound good?)

The Garden and Miss Mead invite all members to come in and enjoy the restaurant during the beautiful days of spring. Is there anything more pleasant than lunch on the outdoor dining terrace overlooking the Linnean House and the Spoehrer Plaza and the Latzer Fountain?

Remember—brunch at the Garden on Sundays from 10 a.m. until 1 p.m. The view and the brunch are spectacular.

Winter Photography Contest Winners

Ron Kovach and his six-year-old son, Eric, showed recently that visiting the Garden and photography are two pastimes that members of a family can share. Ron Kovach was awarded first prize in the 1983 Winter Photography Contest for his entry in the Senior Division, Color Category. Eric received one of four honorable mentions awarded in the Junior Division (18 and under), Color Category.

First prizes also went to Rick Forestal (Senior Division, Black and White), Kim Osborn (Junior Color), and Craig Higgins (Junior Division, Black and White).

The judges also awarded 14 honorable mentions in the four categories. For Color, Senior Division: William Hudson, Charles Sherwin, and Jeannette Daugherty. For Black and White, Senior Division, Deborah Brown Hansen, Charles Dana, Bill Hartman, and Dr. James Stockes. For Color, Junior Division: James Eaton, Jean Bordes, Eric Kovach, and Ari Schneider. In Black and White, Junior Division: Kim Majoras, Dana Rose, and Erik Dahms. There were more than 250 photographs submitted for the competition.



$50,000 Grant from Joyce Foundation

The Joyce Foundation of Chicago has awarded to the Garden an additional challenge grant of $50,000 since the Garden successfully met the second phase of a two-year, $100,000 challenge grant. The Joyce Foundation is a philanthropic organization that makes grants in several fields primarily to midwestern, nonprofit organizations.

In meeting the challenge, the Garden was required to enroll 1,000 new members and to receive increased contributions from existing Members totalling $50,000.

The Foundation also made an earlier grant to the Garden to enable Latin American botanists to participate in a symposium on the Flora of Panama project in 1979.

Visit Tower Grove House to see the recently refurbished library. The walls were painted a light gray and wallpaper borders were added. It was the custom in the mid-19th Century to divide walls into panels, using stylish "fresco papers," or imitations of artificial moldings to frame vertical rectangles.

The Tea Room in Tower Grove House is open Tuesday and Thursday. Call for reservation by noon on Monday or Wednesday . . . 577-5150. . . . . .



Being congratulated by Board President C. C. Johnson Spink (right) are Members of the Henry Shaw Fund Committee, (l-r) Mr. John C. Lathrop, Mr. Robert M. Williams, Jr., Mr. Alan E. Doede, Mr. Robert E. Kresko, Mrs. Robert H. Kittner, Mr. Kevin R. Farrell, and Mr. L. Patrick Ackerman.

Henry Shaw Fund Success

Congratulations and thanks to the Henry Shaw Fund drive committee for yet another successful effort. This year's campaign resulted in contributions of $526,236—a 35% increase over last year's drive. The committee included: Robert E. Kresko (Trammell Crow Co.) and Harry E. Wuertenbaecher, Jr. (Union Electric), Co-Chairmen, and Patrick F. Ackerman (Ackerman, Inc.), Rosemary E. Carson (Centerre Bancorporation), Gary A. Close (Arthur Andersen and Co.), Charles A. Dill (Emerson Electric), Alan E. Doede (MFG Associates), Kevin R. Farrell (White Management Co.), George K. Hasegawa (Horner and Shifrin, Inc.), Mary Hillerich (Mercantile Bancorporation), John C. Lathrop (Arthur Andersen and Co.), H. Dean Mann (Ernst & Whinney), George S. Rosborough, Jr. (Measuregraph Co.), Charles M. Ruprecht, David L. Sliney (Monsanto), Franklin F. Wallis (Bryan, Cave, McPheeters & McRoberts), Robert M. Williams, Jr. (Williams Patent Crusher & Pulverizing Co.), and Mrs. Robert H. Kittner, Chairman of the Phonathon Committee.

Board Elects Officers



William R. Orthwein and C. C. Johnson Spink

At its January meeting, the Garden's Board of Trustees elected its officers for 1983. Re-elected to a third year as President was C. C. Johnson Spink. William R. Orthwein, Jr. was re-elected as First Vice-President, and Louis S. Sachs was elected as Second Vice-President.



Louis Sachs

Come to Colorado



For seven days this summer, using the resources of the Nature Place, Garden Members can explore the mountains and rivers of one of the country's most beautiful states. They will visit fossil beds to observe remnants of the earth from 35 million years ago and have the chance to dig some of their own fossils as well. They will see the Sonoran Desert and tour Cripple Creek, one of the world's richest gold-producing areas.

On the fifth day of the visit they will take a guided, all-day alpine excursion and enjoy beautiful timberline scenery, discover tiny alpine flowers, and explore the historic mining areas in Leavick Valley. They will have the opportunity to do some star gazing in an inflatable star lab.

Throughout the entire trip, they will have the chance for evening hikes, early morning bird-watching, swimming, camp fires, cook-outs.

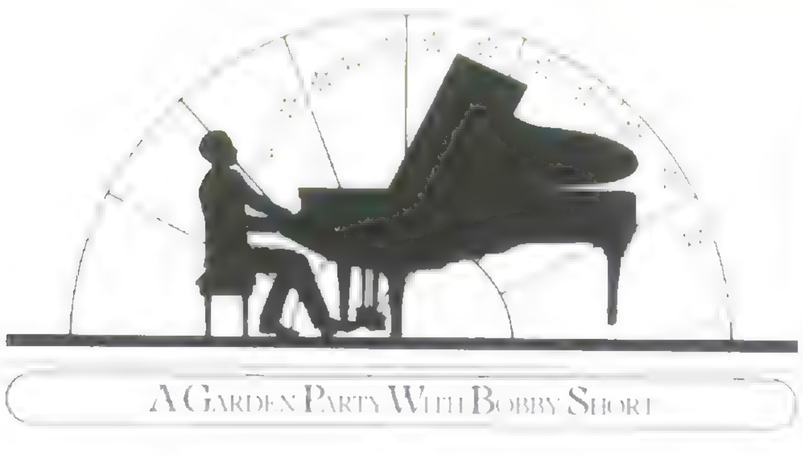
The Nature Place, designated by the National Park Service as a "National Environmental Study Area," is part of the Colorado Outdoor Education Center. Situated on the back side of Pike's Peak, it is centered on 6,000 acres of beautiful mountain land. It provides visitors with deluxe studio apartments constructed of natural wood, native rock, and large areas of glass.

The leaders of the tour are Erna E. Eisendrath, a St. Louis botanist and author of the popular *Missouri Wildflowers of the St. Louis Area;* Richard Coles, a St. Louis biologist and Director of Washington University's Tyson Research Center; and David Wilson, the Garden's environmental educator and coordinator of the ECO-ACT program.

The cost for this tour is $400 and it includes meals, room and instruction and tours, and a $50 tax deductible contribution to the Garden. For children 9 to 15, cost is $235; and for those 2 to 8, it is $175.

For those interested, there will be a program presented by Dr. Eisendrath and Dr. Coles in the Ridgway Center on Sunday, April 17, at 2:00 p.m. Call 577-5100 for information.

A Garden Party with Bobby Short



The Garden Benefit on Saturday, April 23, promises to be a spectacular event. Entertainment will be provided by renowned pianist/vocalist Bobby Short and omelets will be made to order by "The Omelet Man" Rudolph Stanish. These attractions plus fabulous decorations by Stix, Baer & Fuller's designer Ray Pape will transform the Ridgway Center into a cabaret in grand style. Mr. Pape has provided the decorations for several other Garden benefits as well as benefits throughout the city.

The Black-tie evening will be in two parts. Dinner will be held beginning at 6:30 p.m. in the Ridgway Center. The cost of $150 per person includes cocktails and a private performance by Bobby Short, as well as the after-dinner festivities. Patrons ($250) and Benefactors ($500) will receive preferred seating.

Beginning at 9:00, cocktails will be served and there will be a cabaret program by Bobby Short, dance music by Encore Orchestra, and an omelet breakfast prepared by Mr. Stanish.

For those not attending the formal dinner earlier in the evening, the cost of the after-dinner festivities is $75 per person; 32 and under, $50 per person.

To make reservations mail checks payable to: A Garden Party, P.O. Box 1421F, St. Louis, Missouri 63150.

Chairpersons for the benefit are Mrs. Robert Hermann, Mrs. Walter Stern, and Mrs. Warren Shapleigh.



Receiving certificates from Alan Godlewski (center) are Edward Gildehaus and Regan Schall.

Master Gardener: Education & Service

A new program at the Missouri Botanical Garden combines horticulture education and public service, two of the Garden's most important roles.

Called Master Gardener, the program provides advanced training for amateur horticulturists. It was developed by the Garden in association with the University of Missouri Extension Service, and calls for an eight-week course of intensive work in subjects from plant physiology to insects and plant diseases to propagation. Participants are also required to attend the annual, 15-week Answer Service lecture series. In all, the training program involves more than 50 hours of instruction. No fee is charged aside from the cost of any optional resource material a participant chooses to purchase—but, upon completion of the program, each Master Gardener must volunteer to spend an equal amount of time in community service.

The program was designed to enable the Garden to meet increasing requests from the community for help in cultivating gardens, maintaining landscapes, and solving problems related to plant care. Master Gardeners are available to assist community groups and organizations as staff for plant clinics, as advisors for community gardening projects, or as horticulture seminar leaders. The Garden does not charge a fee to groups who use Master Gardeners; interested organizations may call 577-5140.

In late February, the first class of Master Gardeners completed the training program. All have been active with the Garden's Answer Service. They are: John P. Brown, Edward J. Gildehaus, Gerald E. Tynan, Phyllis Phelps, Frank E. Hanchett, Barbara Kuhl, Kenneth Lindenmann, J. Marshall Magner, Robert G. Schaeffer, Regan Schall, Carol Taxman, George J. Tribble, and Elmer W. Wiltsch. Instructors included staff members of the Garden and the Extension Service.

Notes from the Garden



A.A.R.S. Honor to Lehmann Rose Garden

The Anne L. Lehmann Rose Garden will receive the 1983 All-America Rose Selection's "Public Rose Garden Award" later this year. The award is made, once a year, to an outstanding United States rose garden if there is one the judges consider worthy of selection.

The presentation will be made during the annual convention of the American Rose Society, held this September 18-21, at the Missouri Botanical Garden.

Displaying more than 4,000 roses, the Anne L. Lehmann Rose Garden was dedicated in 1976. It is one of 23 test gardens for the All-America Rose Selections honor, awarded to the most outstanding rose varieties each year. Because the Garden is a test center, visitors have the opportunity to see the newest rose varieties several years before they are available for sale to the public.

The rose garden is named for Anne L. Lehmann, long-time Garden supporter. . . . . .



John Behrer

John Behrer has been promoted to the position of superintendent at the Shaw Arboretum, a facility of the Missouri Botanical (Shaw's) Garden located near Gray Summit, Missouri. In his new capacity, Behrer will be responsible for the overall operation of the four square miles of prairies, woodland trails, visitors center, plant collections, and educational programs. Behrer previously served as operations coordinator at the Shaw Arboretum and attended Colorado State University. . . .

M. Jessica Ventimiglia has recently been appointed Grants Administrator at



M. Jessica Ventimiglia

the Missouri Botanical Garden. She will be responsible for accounting, maintenance, and other tasks related to the more than $1 million in grants the Garden receives annually for support of its education, research, and library activities.

Ms. Ventimiglia previously worked on special projects for the Garden's Controller's Office. Prior to joining the Garden's staff in 1977, she was an Assistant Research Statistician for Ralston Purina and a Budget Analyst for Monsanto. She holds a Bachelors degree in Mathematics from Fontbonne College. . . . . .

Garden Membership Tops 15,000



With Mr. and Mrs. Buescher is Mrs. Shadrach F. Morris, Jr., (l) President of the Members' Executive Board.

Marlene Buescher of Chesterfield, MO., became the 15,000th member of Missouri Botanical Garden when her husband bought her the membership as a gift on December 6, 1982. To mark the record Mrs. Buescher participated in the dedication ceremonies for the Beaumont Room at her first membership event, the Orchid Preview Party on January 28.

"I am simply delighted with this recognition. We have always enjoyed the Garden and are happy to help it achieve this milestone," Mrs. Buescher said.

Membership for the Garden has increased by 11 percent over last year's total. In the past 12 years, membership has risen from 2,500 to 15,000 people, a 500 percent increase. . . . . .

Botanical II, the sequel to the popular travelling exhibit, *500 Years of Botanical Illustration,* has been touring the middle west, to much acclaim, in the last few months. The exhibit, consisting of 82 drawings, paintings, and illustrations from the Garden's collection of almost 5,500 examples of botanical illustration, is a joint project of the Garden and the Mid-America Arts Alliance. The M-AAA reports that the exhibit has been scheduled into September, 1985, throughout the five states served by the Alliance: Missouri, Kansas, Oklahoma, Nebraska, and Arkansas. The Alliance reports also that there is much interest in the exhibit beyond the area it serves and that *Botanical II* will be shown in several other states and Canada. M-AAA commissioned the Garden to create *Botanical II* because the first exhibit was the most popular travelling exhibition in the history of the Alliance. . . . . .

Tour Guides Honored

The Garden recently honored Hazel Lowenwarter and Katherine Chambers for outstanding service as volunteer tour guides at the Garden. Both women have led group tours through the Garden for more than 5 years and were recognized during a reception celebrating their 80th birthdays.

"Volunteering as a Garden tour guide offers me a chance to meet people and share my knowledge of the Garden and plants," said Mrs. Loewenwarter. "Being 80 years old is a pleasure, especially because I am able to be so active."

More than 500 volunteers of all ages contribute their time to the Garden and are a vital part of its operation. The volunteers participate in developing the Garden's education, display and research programs and also provide a public gardening information service. . .



World renowned mime Marcel Marceau recently visited the Garden.



With Garden Director, Peter H. Raven are Mr. and Mrs. Edward L. Bakewell, Jr., in the new Bakewell Court on the west side of the Linnean House. Made possible through a gift of the Bakewells, the Court was designed to complement the architecture of the Linnean House, the oldest public greenhouse in the country. Mr. Bakewell is president of Bakewell Corp., a commercial-industrial real estate brokerage, development, and consulting firm.

Peter H. Raven, the Garden's Director, was recently elected as a member of the Council of the National Academy of Sciences. The 12-member Council is the governing board of the 120-year-old N.A.S. which was created by legislation signed by Abraham Lincoln. The Academy now has almost 1,400 members who are elected for distinguished contributions to the sciences. It publishes a journal, *The Proceedings of the National Academy of Sciences,* organizes symposia, and convenes meetings on issues of particular importance and urgency—such as the impacts of changes in the federal budget for research and development.

Dr. Raven was elected to the National Academy of Sciences in 1977. . .

Lots of news from the Garden Gate Shop. For instance, the annual Spring Plant Sale opens to Members on April 14-15 and offers them a 20% discount on all merchandise in the Floral Display Hall and Plant Sales Department of the Garden Gate Shop. It's a perfect time to purchase everything you'll need to make your home and yard the best it's ever been. . . . . .

And, the Spring Herb Sale, very popular last year, is back, offering more than 15,000 herbs ready for planting. Imagine cooking with your own fresh herbs, and (here's the good part) saving 20% when you buy them. It's in the Floral Display Hall. . . . . .

A new feature of the Garden Gate Shop opens in April: an outdoor plant patio, offering hard to find perennials, hostas, hardy boxwoods, and more. The staff thanks, by the way, Isabelle Morris and all the other volunteers who worked so hard to make the outdoor plant patio such a fine attraction.

. . . . . .

And Brown-Jordon Outdoor Furniture is available to Members, through May 31, at a 20% discount. Order it through the Garden Gate Shop; please allow 6 weeks for delivery. . . .

Violets for All Seasons is the theme for the 1983 African Violet Show. Sponsored by the Metropolitan St. Louis African Violet Society, the Show—the 29th sponsored by the Society—will be held in the Ridgway Center on Saturday and Sunday, April 9-10, from 9 a.m. until 5 p.m. The Society anticipates that more than 300 African Violets will be displayed; awards will be given in 46 classes.

The African Violet Society, affiliated with the African Violet Society of America, provides information on the culture and arrangement of African Violets. Persons interested in the Show may call 725-8185; those wanting to join the Society may do so at the Show or may call 962-7312. . . . . .

As a center for horticulture, the Missouri Botanical Garden works closely with more than 200 societies and garden clubs in the St. Louis area, providing assistance and information. . . . . .

New Members January–February 1983

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Mr. and Mrs. Arthur A. Zeis, Jr.

Sustaining Members
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Ms. Mary Appuhn
Ms. Edna Duenckel
Mr. Thomas J. Guinan
Mr. and Mrs. Norman L. Krause
Mr. and Mrs. Herbert A. Mack
Mr. Stanley R. Mitchell
Mr. David L. Sliney

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Mr. John D. Adams
Mr. Joe Adorjan
Mr. and Mrs. Donald M. Albers
Mr. and Mrs. William L. Bartz
Dr. and Mrs. John Biggs
Mr. and Mrs. Robert A. Black
Mr. and Mrs. Robert J. Bodine
Miss Marjorie J. Borgmann
Ms. Carroll B. Christie
Mr. and Mrs. Frederick L. Dierker
Mr. James Doyle
Mr. Merle L. Engle
Mr. and Mrs. Parker W. Fritschle
Mr. and Mrs. Charles W. Groennert
Ms. Iris V. Habermaas
Mr. and Mrs. John H. Harwood
Mr. Bruce Homeyer
Mr. Thomas P. Howe
Mr. and Mrs. John Hudson
Mr. and Mrs. Philip A. Hutchison
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Mr. and Mrs. Henry F. Luckel
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Mr. and Mrs. Brian Matheny
Mr. Ralph E. Meahl
Mr. James R. Meeker
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Ms. Lois Olsen
Mr. and Mrs. Charles O. Planting
Mr. and Mrs. James Ruyle
Dr. and Mrs. Robert G. Schaeffer, Jr
Mrs. Elizabeth J. Shands
Ms. Marie Simmons
Mr. James P. Sinclair
Sisters of Most Precious Blood
Mr. and Mrs. Robert W. Staley
Mr. and Mrs. R. A. Vincent
Mr. and Mrs. Adolph H. Wende
Mr. and Mrs. Thomas Winkler

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Mrs. Willard King
Mr. and Mrs. Eugene A. Knackstedt
Mr. and Mrs. Joseph W. Losos
Mr. and Mrs. Chalmers A. MacIlvaine
Mr. and Mrs. J. K. VerHagen
Ms. P. Lynn Wakefield
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Mr. G. R. Blackburn
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Mr. and Mrs. Kenneth M. Klaus
Mr. and Mrs. Russell A. LaBoube
Mr. and Mrs. Charles W. Lorenz
Mr. and Mrs. Charles MacVeagh
Miss Phyllis McPheeters
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Mr. John L. Walker
Miss Jane Weber
Mr. and Mrs. Robert A. Wendel
Miss Dolores Wildhaber
Mr. Bernard S. Wildi
Mr. Tom Williams

Tributes

January–February 1983

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Mr. and Mrs. Leon Bodenheimer, Jr.

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Marv and Myra Grossman

Mrs. Joseph Bascom
Mrs. Martha N. Simmons

Leon Bodenheimer
Mr. and Mrs. Joseph Lelewer

Louise Golman
Dr. and Mrs. Harold Cutler

Mr. and Mrs. William Hedley
Associated Garden Clubs of Clayton

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Mr. and Mrs. John Isaacs, Jr.
Carolyn and Jim Singer

Robert Herman
Missouri Botanical Garden Guides

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Mrs. Jean Bloch
Mr. and Mrs. Joseph Wollenberger
Mr. and Mrs. Paul Lowenwarter
Mr. Steve Wollenberger
Mr. Richard Wollenberger
Miss Andrea Lowenwarter
Mr. David Lowenwarter

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Mr. and Mrs. Henry Hitchcock

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The Garden Club of St. Louis

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The Garden in Sheffield Gray

At left is *Linnean in Sheffield Gray* by artist Patrick Shuck, one of ten gum-bichromate prints Shuck exhibited recently at Maryville College. All ten prints use the interior of the Linnean House as their central image. In his *Post-Dispatch* review, critic Robert W. Duffy said, "Using this image as a skeleton [Shuck] adds color and overlays plant forms and clouds and various shapes to create the final product. . . . In *Linnean in Sheffield Gray*, he makes reference to his and [Garden founder Henry] Shaw's hometown, to what he remembers as the town's atmosphere . . . but the general air of the prints is mysterious; it is as if the artist x-rayed the greenhouse and discovered haunting presences." Shuck himself, who immigrated to St. Louis from Sheffield a decade ago (as Shaw did almost 165 years ago), said, "The building was reminiscent of Sheffield to me—I was struck by this the first time I walked into it, before I knew that Shaw, like me, was from Sheffield. The Linnean House seemed to say something to me about the man himself—it's indicative of Shaw and his times, of his thinking and the world he wanted to create. It shows the man as an artist; a thinking man creating a space for himself. The building seems to be full of moods—full of ghosts."

Shuck is on the faculty of St. Louis Community College–Meramec.

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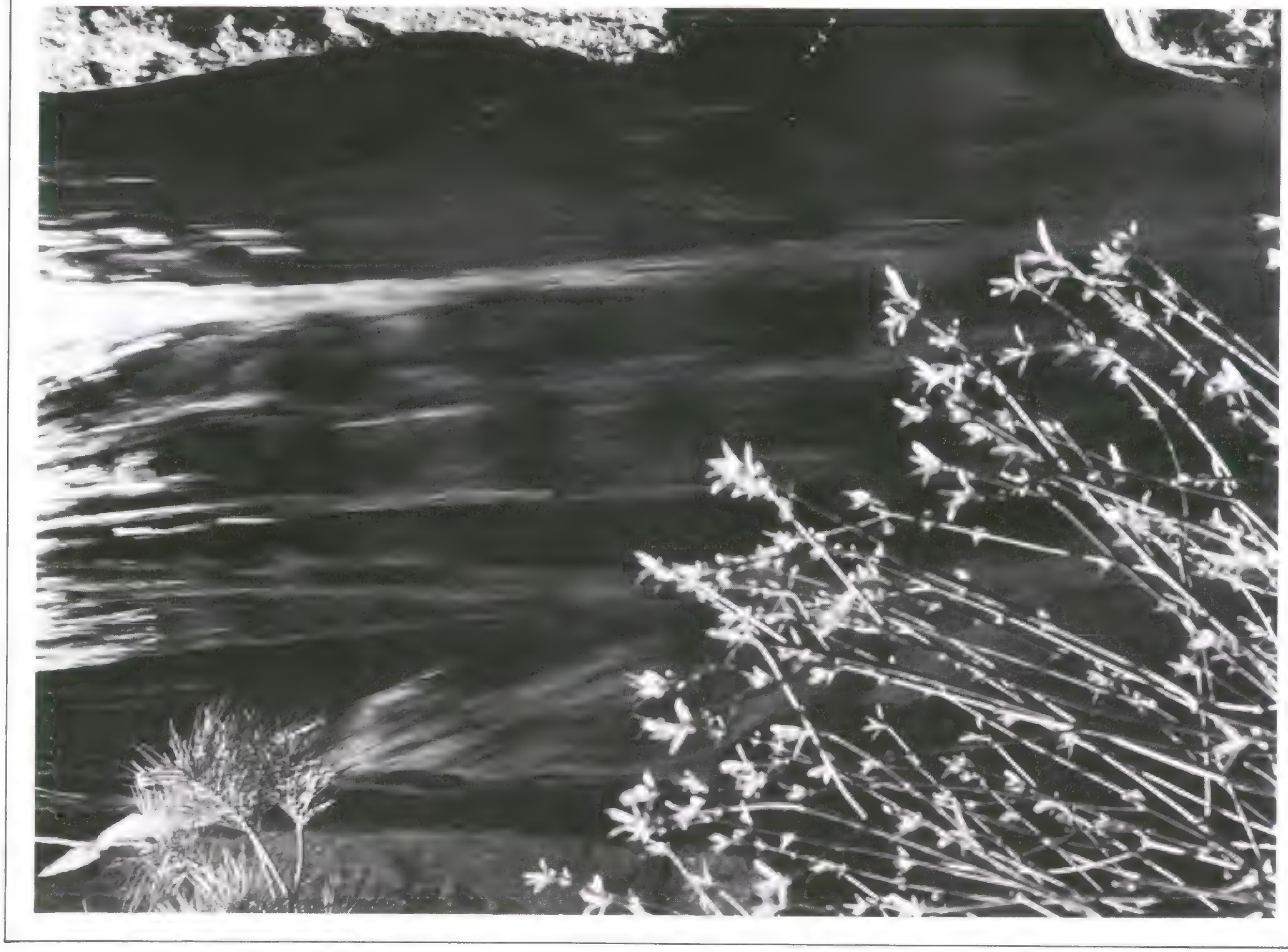
SECOND CLASS
POSTAGE
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AT ST. LOUIS, MO.

Treasures

ANNUAL REPORT 1982

MISSOURI BOTANICAL GARDEN BULLETIN

VOLUME LXXI • NUMBER 3 • MAY 1983



• FROM THE PRESIDENT •

If for no other reason that the completion of the Ridgway Center, we could say that 1982 was one of the most eventful and successful years in the Missouri Botanical Garden's history. The $ 9 million Center—funded entirely through the generous support of individuals, corporations, and private foundations, in addition to a challenge grant from the National Endowment for the Arts—significantly increases the Garden's potential. Perhaps we could have called 1982 *The Year of Promise* and let it go at that, content in what we are bringing to the future of St. Louis and the world. But speaking of the promise we have, the potential we have because of this new Center, would not truly give an accurate or complete description of the last year.

Despite the enormity of the accomplishment of the new Center, because of the importance of our roles as educator, scientific institution, and horticultural center, we could not put forth any less effort toward the fulfillment of our responsibilities in these areas, regardless of whatever else was achieved.

Perhaps, then, a more accurate name for 1982 would be *The Year of Promise and Fulfillment*, for the year was successful in all areas:

♦ In a year in which many school districts were cutting their budgets, the number of students participating in educational programs here reached its highest level ever.

♦ Our attendance increased once again at a rate in excess of 10%; for the months following the opening of the Ridgway Center, it increased by more than 25%.

♦ Much of the north end of the Garden was redeveloped; several new gardens were installed. In addition, extensive work was done throughout the grounds to improve our exhibits.

♦ Our botanical program, already the world's most active, had its most productive year ever, with our staff adding a third more scientific specimens than were added the previous year.

♦ Our total membership, one of the most important indicators of our success in serving the public, surpassed 15,000. No other garden in the world has a membership as large.

♦ The annual Henry Shaw Fund Campaign resulted in contributions totaling more than one-half million dollars, a 35% increase over 1981.

The only problems with the facts and figures I have mentioned above is that they merely *summarize* the accomplishments of the year. They do not adequately express the diligence and enthusiasm of all who worked so hard, day to day—every one of 365 days—to bring about our success. Behind every class, every exhibit, every research project are hours of labor and support by staff members, volunteers, members, and contributors.

The report that follows—and it is a good one—is a reflection of this work and support. Everyone behind the numbers, lists, projects, and programs included throughout these 16 pages are to be congratulated and appreciated. They have made 1982 what it was; they have brought the Garden to where it is now: ranking as one of the finest botanical institutions on earth.

Johnson Spink

—C. C. Johnson Spink
President, Board of Trustees


5830D

• FROM THE DIRECTOR •

The last decade has been one of the most important in the twelve-plus decades that the Garden has been in existence. Between 1972 and 1982, the Japanese Garden, English Woodland Garden, and Anne L. Lehmann Rose Garden were constructed. The John S. Lehmann Building, the center of the world's most active botany program, was completed. There have, as well, been uncountable improvements and expansions to all Garden facilities and programs; we are serving tens of thousands more visitors and more students now than we were in 1972.

And in 1982, the Ridgway Center was opened.

Throughout the planning and construction of the Center, we have repeated that its operation would profoundly increase our potential for service. Although it was open for only the last five months of the year, this has been unquestionably borne out. While each of the other features we completed in the last ten years has added significantly to our ability to serve our visitors, giving us some of the finest garden displays in the world, the Ridgway Center brings us such a range of facilities that it affects every area of operation.

◆ For the first time, the Garden has an all-weather facility for visitors; the effect of this was demonstrated in that, for the fall, with the Center our attendance was higher by 40% than in the previous year. In December, the increase in attendance approached 50% over the same month in 1981. This trend continues into 1983, during which time our attendance has been significantly higher than in the first part of last year, in which we did not have the benefit of the Center.

◆ The Floral Display Hall, with its 5,000 square feet of exhibit area, allows us to do a wider variety of horticultural exhibits and other programs requiring a large, open area.

◆ The additional classroom space means we can continue to serve effectively the ever-increasing number of students who turn to us for science, horticultural, and botanical education.

◆ The Shoenberg Auditorium gives us the opportunity to offer more and different programs than did our previous public auditorium.

◆ The Spink Gallery adds another dimension to our exhibits, allowing us to display some of the world's finest porcelain sculpture.



◆ A Visitor Orientation Theater acquaints even the most casual visitor with our programs and displays, making visitor's time here more meaningful than ever before.

◆ By moving our Education department into the Ridgway Center, we are able to provide more room for our research program which, although it is already the world's most active, has been expanding at a tremendous rate every year.

The substantial increase in attendance following the opening of the Center, along with the enthusiasm for the building and the facilities it provides by those who have seen it and enjoyed what it offers, clearly demonstrates two points. One, that people see the Ridgway Center as a valuable resource in itself. Two, that they understand the importance of the Garden's work in all areas and are excited by the new Center because they foresee it greatly enhancing our displays, programs, and service, enabling us to increase dramatically the effectiveness of our vital

• FROM THE DIRECTOR •

work.

If there was one disappointment in 1982—and it was a qualified disappointment at that—it was the defeat in August, by voters, of a sales tax proposal which would have provided much needed revenue for the community in several different areas: economic development, tourism promotion, and support of the community's major cultural institutions, including the Garden. However, even in that defeat was a positive result. Those with whom we talked during the campaign affirmed that they saw the Garden as one of the area's most vital and important resources.

This regard for us and all that we do was very obviously demonstrated when, in April of this current year, voters approved a measure which will now provide us with a critical financial base of tax support.

The combination of the Ridgway Center and the new tax support places the Garden at the beginning of what could be its most productive era ever.

Peter H. Raven

—Peter H. Raven
Director



• RESEARCH •

With each passing year, humanity loses more and more of one of its most valuable yet irreplaceable resources—the world's tropical rainforests. From these areas have come plants that are today used as basic foods in our diets and essential medicines for our treatment of diseases. Regularly our own scientists discover new species which have potential as foods, medicines, and economic products that could—like rubber, corn, or rice—profoundly affect the world's peoples and economies. Yet, because of pressure for development of tropical land, these areas are being destroyed at incredible annual rates. The total area of the rainforests is now equivalent to the size of Europe; last year an area equal to that of Great Britain was destroyed. Each week, an area equal to that of Delaware vanishes. As these areas are deforested, countless species of plants and animals become irretrievably extinct.



Because only about one-sixth of the tropic's estimated 3 million plant and animal species have been identified, and because almost a quarter of these are likely to become extinct by early in the next century, the Missouri Botanical Garden maintains the world's most active botanical program, striving to locate and study as many plant species as possible before they are lost forever.

♦ During 1982, more than 120,000 specimens were added to our herbarium. *This represented an increase of 33% over the number added in 1981 and an increase of almost 75% over the total added two years ago.*

♦ Our botanists did extensive research in Peru, Bolivia, Colombia, Nicaragua, Brazil, Ecuador, Panama, Costa Rica, South Africa, New Caledonia, and Mexico.

Because of this extraordinary activity and the high quality of work performed here, the Garden is recognized as one of the world's leading centers of scientific research.

♦ Almost 650 individuals and institutions borrowed a total of 43,878 specimens from the Garden's herbarium. This was an increase in loans of 30% over the number of loans made in 1981.

♦ Almost one-third of these loans were to foreign scientists and institutions—an indication of our international importance.

♦ Additionally, another 300 individual researchers and institutions from 46 states and 22 countries borrowed materials from our library which contains one of the world's largest collections of botanical literature.

A further mark of the Garden's international stature was shown at the 29th annual Systematics Symposium, which concerned the relationship between the plants and animals of Eastern Asia and Eastern North America. Almost 400 scientists from 38 states and the People's Republic of China, Japan, Sweden, Canada, Mexico, and Venezuela attended. The 16 member delegation from the PRC represented the largest group of Chinese scientists ever to attend a botanical meeting in the Western Hemisphere.

♦ In August, the Second International Symposium on the Biology and Taxonomy of the Solanaceae was held at the Garden. Attended by 200 scientists from around the world, the Symposium was concerned with current research in this economically important and diverse plant family which includes the potato, tomato, tobacco, pepper, and other

• RESEARCH •





plants of economic and medicinal value. In recognition of the importance and scope of its scientific work, the Garden received grants totaling more than $1,000,000 for its botanical program.

◆ A grant of $55,000 from the Jessie Smith Noyes Foundation supports work in Costa Rica and Colombia as well as provides a post-doctoral fellowship in the herbarium.

◆ A grant from the Andrew Mellon Foundation provides $350,000 for the Garden's work in tropical Africa, tropical America, and Madagascar.

M. R. Crosby

—Marshall R. Crosby
Director of Research

• EDUCATION •

A fifth grade student who participated in the Garden's ECO-ACT program this past year commented, "I like ECO-ACT because you ask a little question and you get a big answer."



In our age, with its rapid technological advances and our increasing awareness of the importance of science education, more and more people—teachers and students alike—are turning to the Garden for information and instruction; for the "big" answers to the apparently "little" questions.

♦ In 1982, 51,710 students—more than in any previous year—participated in programs at the Garden. This was an increase of 10% over 1981; 44% over 1980.

While the increase appears modest when compared with that of the previous year, we were extremely pleased since we had actually anticipated a decline in enrollment by students. Because of the economic problems faced by many schools and school districts, there were sharp budget cuts by these institutions, resulting in fewer funds being available for the costs of transporting students to the Garden and other, similar institutions.

Partially because we foresaw this—that fewer students might have the opportunity to participate directly in our educational programs—and also because we were eager to expand our ability to serve even more students, we began to provide programs and facilities for teachers. For each educator we reached directly, we estimated we would indirectly reach thirty to fifty students or more each year since teachers would return to their classrooms with the information and materials we offered.

♦ One of the most exciting facilities in the Ridgway Center is our teacher resource center, containing books, slide packets, and other materials for use by teachers. Much of this material would not otherwise be available to educators.

♦ In November, we held the first St. Louis Science Educators Symposium, designed to inform teachers of recent advances in science and technology and to provide them with related curricula and materials. Teachers from 43 junior and senior high schools attended the Symposium.

Other programs during 1982 offered some unique educational opportunities for students of many ages and backgrounds.

♦ Global Issues Day in October, developed by the Garden and the St. Louis City School Partnership Program, introduced 100 students to the problems, consequences, and possible solutions to one of the world's most severe maladies: hunger.

♦ ECO-ACT, developed two years ago, was expanded to serve twice as many students as in the previous year (485 as opposed to 262) and provided grade school and high school students not only with important information on environmental issues but also with basic skills they will need to solve en-

• EDUCATION •

vironmental problems in the future.

◆ Our participation in the national education program for senior citizens, Elderhostel, provided an opportunity for adults of age 60 or older to learn about Japanese gardens through our own *Seiwa-En,* the country's finest Japanese Garden.

◆ More than 2,000 young children and their parents attended the Garden's program during the Week of the Young Child, sponsored by the St. Louis Association for the Education of Young Children.

◆ The Living History program, held at Shaw Arboretum and which offers students a chance to learn about Ozark life in the 19th century by spending a week in a log cabin, drew more participants than ever before.

The opening of the Ridgway Center permitted us to expand our educational work into less formal programs designed for even the most casual visitor. These included:

◆ A natural history series, including lectures and films on wildflowers, prairies, and the Ozarks.

◆ Plant Clinics, offered by the Horticultural Answer Service, and a Green Thumb series—both providing answers and suggestions for solution of problems faced by amateur gardeners.

Judith H. Studer

—Judith H. Studer
Chairman of Education





• DISPLAY •

The opening of the Ridgway Center in July of 1982 tremendously enhanced the exhibition facilities of the Missouri Botanical Garden, not only because of the facilities of the Center itself and not only because of the construction of gardens adjacent to and near the Center, but also because the Ridgway Center redefined the entire Garden for visitors by subtly inviting them to tour areas, gardens, and courtyards to which they were not naturally led when they entered through the Flora Gate.

♦ The Floral Display Hall, in which we held our Holiday Plant Exhibit in December, gives our show designers a flexibility they have never before had, one which will allow them to be even more creative in staging the floral shows for which the Garden is already world famous.

♦ The Spink Gallery—an unique exhibition facility for a botanical garden—lets our visitors enjoy some of the world's finest porcelain sculpture, and features procelain birds and flowers by Edward Marshall Boehm and the Boehm Studios.

♦ Outside the Ridgway Center, we added the Spoehrer Plaza with its spectacular Latzer Fountain, the Bakewell Court on the west side of the Linnean House and the Cohen Court on the east side, and the Swift Family Garden on the House's south side. The Scented Garden was moved from the knolls and greatly expanded in its new location along the Garden's east wall, just north of the Flora Gate. We added a new Hosta Garden in memory of Marie Schaeffer Shields, adjacent to the Scented Garden.

In addition to the work related to the Ridgway Center and the development of the north end, there were a number of other exciting improvements and additions to the Garden.

♦ A new Stream Bed Garden, constructed on the knolls, was made possible by a generous donation in memory of Ben Weisman by Patsy Hilda Weintraub. Featuring hardy waterlilies and other water plants, the area will be at its peak in the summer of 1983.

♦ We expanded the hardy rock garden on the east side of the Mediterranean House, installing new plantings that are suitable for rock gardens in the St. Louis climate. This expansion was possible because of generous contributions in memory of Audrey Heckman.



♦ To the already magnificent field of 100,000 crocuses near the Henry Moore sculpture beside the John S. Lehmann Building, we added still another 15,000.

♦ We began construction of a major addition to the English Woodland Garden in memory of Edward G. Cherbonnier, located across the path from the current woodland area.

♦ In all, and not including bulbs, we added more than 3,000 new plantings to the entire Garden.

♦ In Tower Grove House, the restored country home of Garden founder Henry Shaw, there was extensive restoration and redecoration of the front stairway hall on both the first and second floors. As in past years, the House was decorated for the Christmas season after the manner of a Victorian holiday.

♦ At the Garden's Shaw Arboretum, an observation deck was constructed on the Experimental Prairie Project hillside providing a magnificent view of the prairie and the surrounding countryside. Also 10,000 plants representing 52 different species were in-

stalled into the prairie.

Aside from all of the improvements and additions during 1982, the Garden continued to feature a variety of horticultural exhibits. In addition to the major floral shows—the Spring Flower Show, the Orchid Show, the Fall Flower Show, and the Holiday Exhibit, exhibits included:

♦ In conjunction with the important Solanaceae conference held in August, we mounted a display of the major species of that plant family including the commonly known economic species (tomato, potato, tobacco, pepper) and others which are of horticultural interest.

♦ There were two exhibits with a religious emphasis; one for the Jewish holiday, *Tu Bishevat* (New Year of Trees), and one which showed plants which figure prominently in biblical texts and which are appropriate for plantings in St. Louis.

♦ There were also exhibits of bromeliads, waterlilies, carnivorous plants, cacti, roses, and staghorn ferns.

The Garden also continued its pursuit of cultural exchange during 1982 with a major exhibition of art and a festival:

♦ For the last four months of the year, we featured in the Flora Gate Building a major exhibit of Chinese Botanical Art, containing 100 illustrations, watercolors, and line drawings of plants native to China. This exhibit was only the second time this art was on public display anywhere in the world; they were earlier displayed at the XIII Botanical Congress in Sydney, Australia, in 1981.

♦ For the seventh time, we held our popular Japanese Festival during June. Attended by 50,000 persons, the nine-day Festival featured music, dance, food and crafts of Japan, and was sponsored by the Seven-Up Company.



Steven A. Frowine

—Steven A. Frowine
Chairman, Indoor Horticulture

Alan P. Godlewski

—Alan P. Godlewski
Chairman, Landscape Horticulture

John Behrer

—John Behrer
Superintendent, Shaw Arboretum

• COMMUNITY •

From the flower shows to educational programs, from the expansion of our permanent displays to special admission policies for senior citizens, everything undertaken by the Missouri Botanical Garden is done to serve the residents of our community, the St. Louis area.



During 1982, the Garden increased its involvement in community affairs most notably by creating a new position of Public Horticultural Specialist who provides direct horticultural information to the public through the media.

♦ The Answer Service, our telephone advisory service for horticultural problems—staffed completely by Garden volunteers—handled 12,000 questions from residents on all areas of gardening, landscaping, and plant care.

♦ Our professional staff horticulturists cooperated with the St. Louis City's beautification program, Operation Brightside, by helping to transform a vacant city lot into a demonstration vegetable garden and by assisting those interested in rehabilitating other vacant lots.

♦ Members of our staff also appeared regularly on radio and television providing information on horticultural techniques; they were also an important resource for reporters from both print and electronic media, providing answers to questions about severe problems faced by area residents caused by sudden changes in the weather or insect infestations.

♦ The new Master Gardener program has multiplied our ability to reach further into the community with our expertise by providing highly trained individuals as resources available for plant clinics in the Ridgway Center as well as throughout the community.

♦ We continued our involvement in our own neighborhood community through support of and participation in the local, not-for-profit Housing Corporation which we helped form three years ago. This Corporation's objective is the revitalization of the residential buildings in the area surrounding the Garden by promoting the rehabilitation of the structures.

♦ Once again, we opened the Garden, free of charge, to senior citizens during the Orchid Show. Nearly 4,000 persons took advantage of the opportunity, representing a 60% increase over the number for 1981.

♦ And on December 18, we invited all of the community to enjoy the Garden's holiday exhibits without admission charge as our annual Christmas gift to the people of our area; 3,041 visitors came that day.

There are several obvious indications of our relative success at offering the community residents the types of services and displays they desire; all of the measures lead us to the conclusion that—very simply—St. Louis likes what we are doing.

♦ Our attendance increased by 12.5% over 1982. There were 408,058 visitors last year as compared to 362,756 in the previous year.

♦ Attendance from the opening of the Ridgway Center through the end of the year (that is, approximately five months) was higher by more than 25% over the same period in 1981 (297,930 over 165,539).

♦ Our membership reached 15,302—the highest total in our history. This represented an increase of 11% over the total for 1981, and an increase of 512% during the last decade—from 1972 when the membership total was at 2,500.

♦ Our membership total is the largest for







any botanical garden in the country.

♦ The Henry Shaw Fund campaign, which supports the Garden's special programs, brought $526,236 in contributions to the Garden: a 35% increase over the total contributions for 1981.

♦ The number of Garden volunteers reached its highest total ever—last year 506 individuals selflessly gave of their time—41,100 hours in all—in all areas of the Garden's work.

While we were extremely pleased with the very obvious support of our work by the community, we are eager to increase our service to St. Louis. With the extraordinary facilities provided by the Ridgway Center—and the new financial base of tax support actually provided in early 1983—we are confident that we will continue to offer new and different services in the future, all of which will be of equal or higher quality to those which we have been providing for the past 124 years.

Richard H. Daley

—Richard H. Daley
Director of Public Programs

Earl K. Shreckengast

—Earl K. Shreckengast
Director of Development

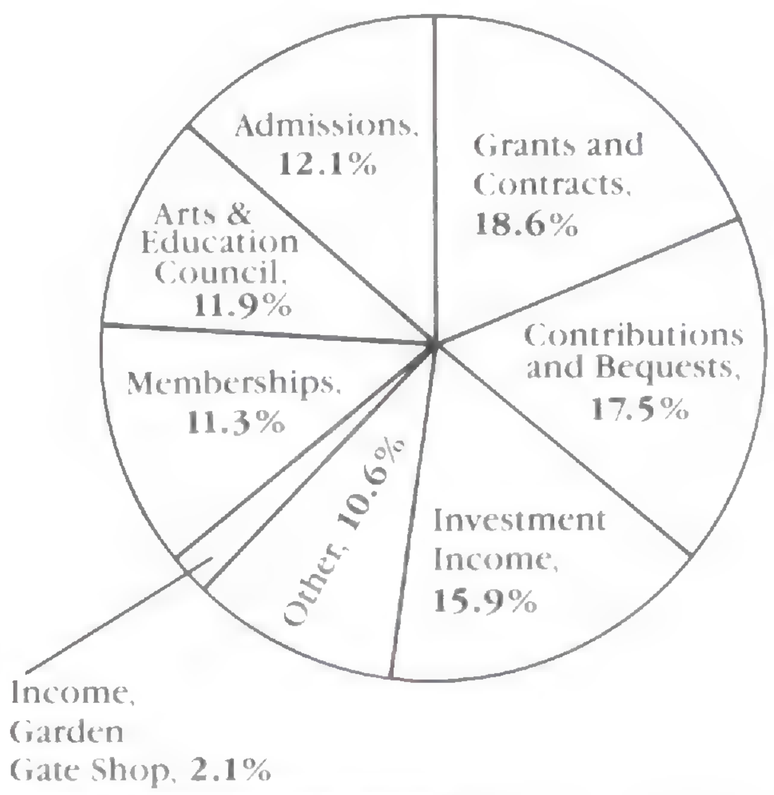
• FINANCIAL INFORMATION •

Missouri Botanical Garden Statement of Support and Revenue Expenses and Changes in Fund Balances for Current Funds For Year Ended December 31, 1982

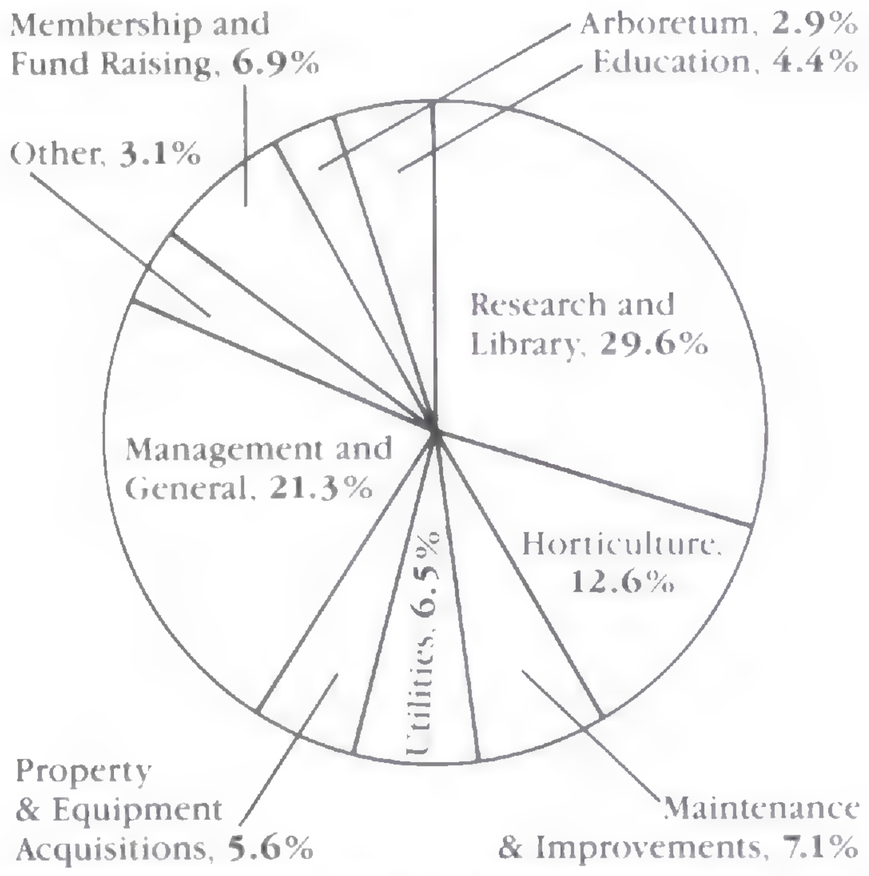
Public Support and Revenue	
Public support:	
Contributions and bequests	$ 838,362
The Greater St. Louis Arts and Education Council	572,250
Memberships	542,094
Total public support	**$1,952,706**
Revenue:	
Admissions	$ 581,312
Grants and contracts	889,245
Net income from Garden Gate Shop	101,604
Investment income, net	761,689
Realized gain on investment transactions, net	85,669
Other	419,239
Total revenue	**$2,838,758**
Total support and revenue	**$4,791,464**
Expenses:	
Program services:	
Horticulture	$ 616,854
Research and library	1,444,419
Education	213,486
Arboretum	143,403
Maintenance and improvements	349,257
Utilities	316,793
Security	115,330
Tower Grove House	38,172
Total program services	**$3,237,714**
Supporting services:	
Management and general	$1,041,907
Membership department	272,370
Fund raising	62,966
Total supporting services	**$1,377,243**
Total expenses	**$4,614,957**
Excess of Public Support & Revenue Over Expenses	**$ 176,507**
Other Changes in Fund Balances—Increase (Decrease):	
Property and equipment acquisitions	(273,000)
Transfer of funds	572
Fund Balances—Beginning of Year	**3,251,624**
Fund Balances—End of Year	**$3,155,703**

• FINANCIAL INFORMATION •

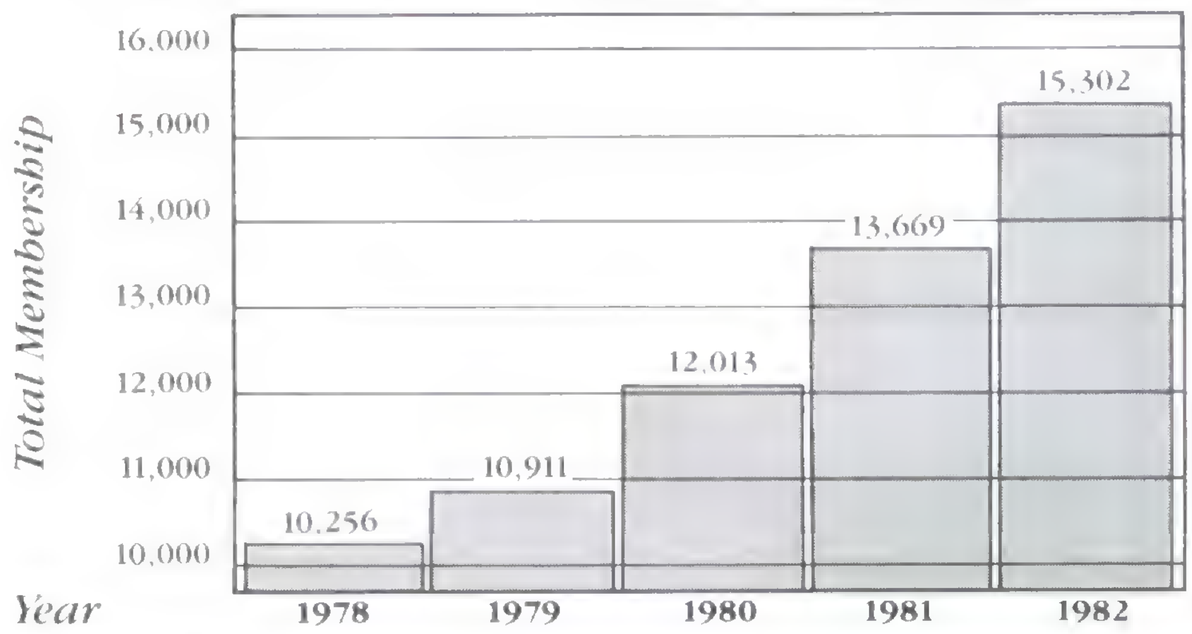
Public Support and Revenues, 1982



Expenditures, 1982



Total Paid Membership, 1978 to 1982



Facts & Figures, 1982

Total attendance	408,058
Students in education programs	51,710
Active volunteers	506
Volunteer hours	41,100
Total herbarium specimens added	127,173
Horticultural accessions	2,545

Other Financial Information:

Additions to Endowment and Capital Funds:	
Contributions and bequests	$4,313,801
Investment income	166,898
Realized gain on investment transactions	100,641
	$4,581,340
Land, Building and Equipment Fund Balance:	
Beginning of Year	$14,984,576
Property and equipment acquisitions	5,139,176
Depreciation	(500,005)
Property retirements and transfers	(8,316)
End of Year	**$19,615,431**

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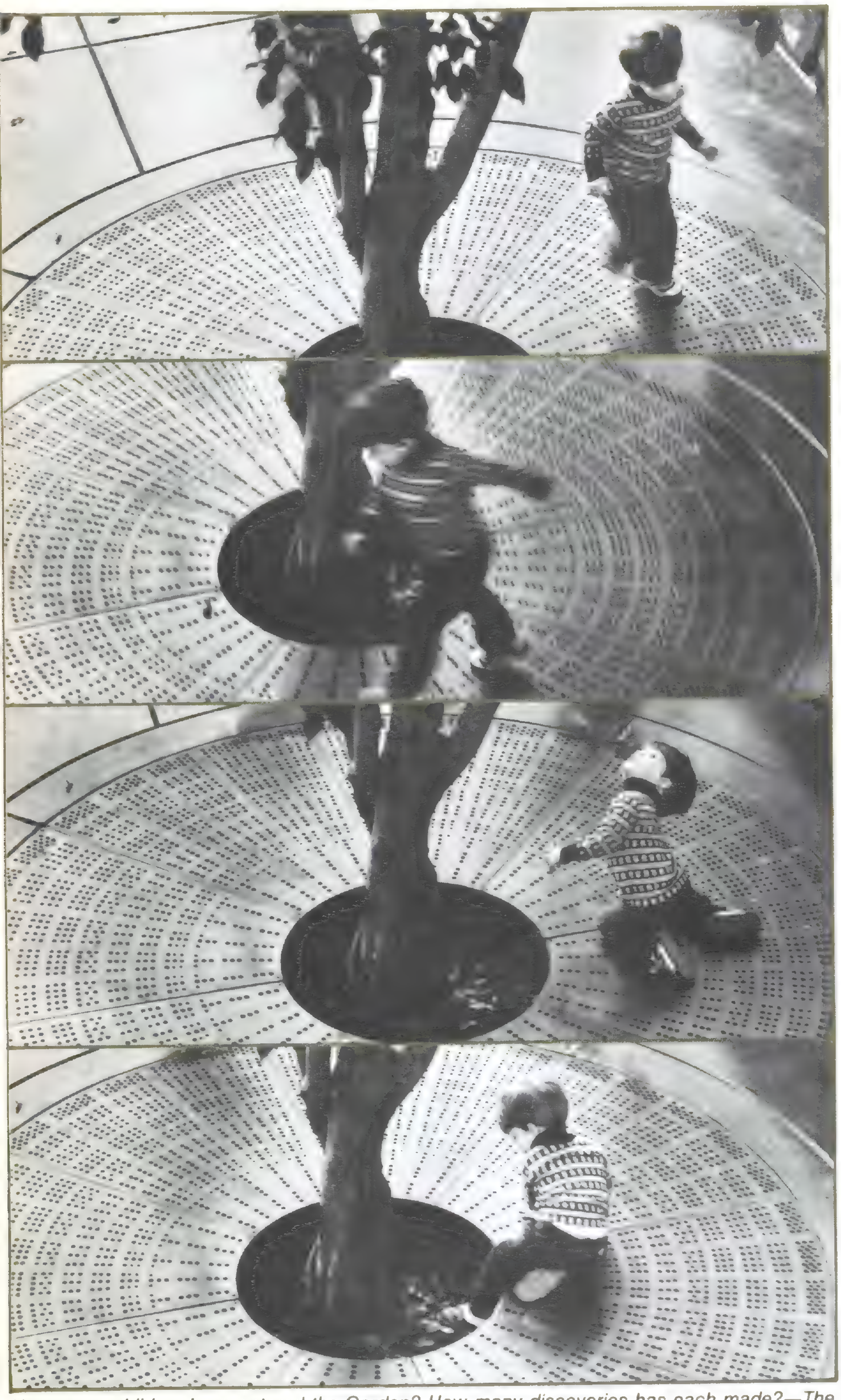
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Invitation Enclosed

Missouri Botanical Garden Bulletin



How many children have entered the Garden? How many discoveries has each made?—The Community and the Garden: a future together. *(Photos: P. Deutschman)*

A Victory for St. Louis

The entire St. Louis metropolitan area has won a tremendous victory. The voters in the City and County have approved the proposals that will provide increased public support for the Zoo, Art Museum, Science Museum, and Botanical Garden.

The approval of the 15-cent tax increase benefits far more than the individual institutions involved. The vote benefits the metropolitan area as a whole. These institutions are part of the cultural heritage of all who live in the area, whether they live in north or south St. Louis, Crestwood or Bridgeton, Ladue or Lemay, Normandy or Webster Groves.

They are part of our memories of a St. Louis childhood. They are creating memories for our children and grandchildren. They are part of what we mean when we say St. Louis is a great place to live and work.

This vote means, of course, that each of the cultural institutions will be able to maintain its high standards and fulfill many plans and projects. But the vote reaches far beyond the institutions themselves. It sends a signal to our area and the nation that residents of St. Louis and St. Louis County stand together united with a common identity, common traditions and goals. It sends a strong message to those evaluating St. Louis as a possible site for living and working. It tells them St. Louis is an area that regards cultural enrichment as essential to a quality lifestyle. The St. Louis area is stronger because of this vote for our cultural institutions—a vote that strengthens our sense of unity and identity.

—Robert Hyland

Because of periodic inquiries regarding the meaning of the Garden's logo, we reprint here an explanation of it that was published in the *Bulletin* in July, 1972, when the logo was first announced to Members.



The genesis of the mark is the folk symbol for man



Compounded to become men (mankind) abstracted to become plant form (botanical). Reflecting the garden's dual concerns for man and the natural world. The inseparable nature of both and, most importantly, their "oneness."



Also the process of research.

A seed pod



germinating

Seeking the common denominator in the plant kingdom, the point at which most things look alike, so as to represent the entire kingdom and not one part . . . newness . . . growth.



The two forms brought together. . . and divided, symbolizing in their separateness plant and man, in their symmetry or reflection the interdependence of one upon the other to create a whole, a mutual reinforcement. Again, "oneness."



The curved lower line: the garden as holding, cradling, nuturing the whole: the earth.

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The **Missouri Botanical Garden Bulletin** is sent to every Member of the Garden as one of the benefits of their membership. For a contribution as little as $30 per year, Members also are entitled to: free admission to the Garden, Shaw Arboretum, and Tower Grove House; invitations to special events and receptions; announcements of all lectures and classes; discounts in the Garden shops and for course fees; and the opportunity to travel, domestic and abroad, with other Members. For information, please call 577-5100.

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Comment



April 5, 1983, was perhaps the most important day in the history of the Missouri Botanical Garden since Henry Shaw first opened the Garden to visitors in the summer of 1859.

The voters of St. Louis City and St. Louis County approved Proposition 4 on April 5th which establishes a Botanical Garden Subdistrict of the Zoo-Museum District and which can provide an important new financial base for the Garden's operation.

While we of the Garden are both pleased and gratified by this victory—one for which we have been working for five years—it is the people of the St. Louis community who can be most proud. Their foresight in providing this new support for the Garden and increased support for the Zoo, Art Museum, and Science Museum indicates that St. Louisians are vitally concerned about our community. The contribution the voters have made for the welfare of all of us will be manifested over the years to follow as the Garden and the other institutions continue to grow and provide the high quality of recreation, education, and scientific services of which we are all capable.

While the opening of the Garden can be credited primarily to the work of two men—Henry Shaw, who provided the idea and the capital for the founding of a botanical garden, and George Engelmann, who helped shape Henry Shaw's idea—the accomplishment of the creation of the Botanical Garden Subdistrict was possible only because of extraordinary effort of many people.

We want to acknowledge the supreme effort of Mr. Robert Hyland, president of the Zoo's Board, who served as Campaign Chairman and brought to the Campaign his unique abilities and seemingly limitless energy as well as his enthusiasm and concern for the future of our community. Marlin and Carol Perkins, who so graciously acted as Honorary Co-Chairman, deserve heartfelt praise and gratitude, as does Charles Valier, the Campaign's Treasurer, whose invaluable work was essential to our success and which cannot adequately be mentioned in our limited space. We need, also, to recognize the tremendous efforts of the Presidents of the Boards of the four institutions. In addition to Mr. Hyland, they are John Peters MacCarthy for the Art Museum, Elwood L. Clary for the Science Museum, and C. C. Johnson Spink who is President of our own Board.

We must acknowledge our Members and our volunteers who granted an enormous amount of their valuable time in all phases of the campaign to bring about this success. In addition, we, of course, want to recognize all of those members of our staff who worked alongside the volunteers and Members, often late into the evenings, so that the Subdistrict could become a reality. Individuals made phone calls, spoke before groups, wrote letters, contacted organizations, and in all cases put forth extraordinary effort for the campaign.

A major reason we were successful was the effort of those who volunteered their time for the telephoning. Our margins of victory in both the city and county were slim—about 2,600 votes in the city; 1,200 in the county (a margin of 0.6 percent in the county!) and this personal contact by phone undoubtedly was the difference between success and failure. On election day, the staff members and volunteers of the four institutions contacted 30,000 favorable voters to urge them to go to the polls.

Finally, we should recall that the groundwork—without which there would be no Botanical Garden Subdistrict—was laid in Jefferson City by William M. Klein (now Director of the Morris Arboretum in Philadelphia) and Rick Daley. This resulted in the passage, in 1981, of legislation—sponsored by State Senator John E. Scott and Representative Russell E. Egan—that gave us the permission to ask the voters in the city and county to establish this new subdistrict.

The passage of the proposition and the establishment of the Botanical Garden Subdistrict mark the beginning of a new era for the Garden. Because of it, we shall continue to grow and to give to the people of our community the quality of service they have come to expect from one of the world's most outstanding botanical institutions.

Peter H Raven

Botanical Garden Subdistrict Created

On April 5, voters in St. Louis City and County approved a measure—Proposition 4—establishing a Botanical Garden Subdistrict of the eleven-year-old St. Louis Metropolitan Zoological Park and Museum District. With the creation of the Subdistrict, the Garden, which this summer enters its 125th year of service to the community, will be provided with a financial base of tax support.

The measure approved by voters allows the Garden to benefit from a property tax of up to 4¢ per $100 assessed valuation. It is anticipated that the Garden could receive $2.6 million annually. (Because the measure that created the Subdistrict calls for the Garden to reduce its admission fees, the estimated net income from the tax is $1.25 million or about one-fourth of the Garden's annual operating budget.)

According to the procedures set-up for the operation of the Subdistrict, the Garden will present each year a budget to the ten-member commission that governs the Subdistrict. The commissioners will recommend a tax-rate up to the maximum of 4¢ per $100 assessed valuation to the Zoo-Museum District Board. (This is the same procedure followed by the Zoo, Art Museum, and Museum of Science and Natural History, the other three institutions covered by the ZMD.) Based upon these recommendations, the District Board will set the rate.

The new Botanical Garden Subdistrict of the Zoo-Museum District created by the voters on April 5, 1983, is governed by a ten-member commission. County Executive Gene McNary has appointed Mrs. David C. Farrell, Mrs. James S. McDonnell, Mr. Robert M. Sunnen, Mr. George H. Walker III, Mr. Frederick S. Wood, as commissioners from St. Louis County and Mayor Vincent C. Schoemehl, Jr. has appointed Mrs. Harry J. Bennett, Ms. Doris Moore-Glenn, Mrs. W. Lynton Edwards III, Mrs. William Kieffer, and Ms. Marjorie M. Weir, as the five commissioners from the City of St. Louis. (An article in the next *Bulletin* will feature these commissioners.)

C. C. Johnson Spink, President of the Garden's Board of Trustees, hailed the appointments, "The Mayor and County Executive have selected a truly outstanding group of individuals to serve on the new Botanical Garden Subdistrict Commission. These men and women are respected throughout the community for their commitment to civic affairs. We look forward to working with them."

The Garden's 26-member Board of Trustees will not be affected by the appointments and will continue in its capacity as the governing body of the Missouri Botanical Garden.

(continued on page 11)

"New" Plant Takes Off

Despite its name, the winged bean cannot fly. But that appears about all it is unable to do.

A member of the legume (pea) family (see related article), and classified by scientists as *Psophocarpus tetragonolobus,* the winged bean was almost completely unknown eight years ago, even though it was described by Carl Linnaeus as long ago as 1763. But, as this is written, there is a flurry of excitement and optimistic prophecy about the plant, which has been called in the popular press, "supermarket on a stalk." In a *New York Times* article last year, reporter Jane E. Brody wrote, "it promises to become the soybean of the tropics, where it alone may do more than any combination of foods to counter malnutrition."

The soybean—as midwestern Americans can appreciate, driving, as they do, past mile after mile of soybean fields—is the most economically important legume and one of the world's most important crops in general. In 1982, American farmers produced 72 million acres of soy. The winged bean has been compared to soy because of its economic and nutritional value and also because of its growth potential. Soy has risen from obscurity to being regarded as one of the world's major protein sources in less than 60 years.

As for the winged bean, scientists and journalists are doing almost everything they can to call attention to the plant. Reports are:

- Its seeds contain about 37% protein, approximately the protein content of the soybean.
- Its seeds are also 18% oil that is high in vitamin E. When the oil is pressed from the beans, a high-protein "flour" is left behind, suitable for breads or cereals.
- Its tuberous roots, resembling potatoes, are 24% protein; compare this to 2% for potatoes and sweet potatoes.
- The leaves of the winged bean resemble spinach both in taste and nutritional value.
- Even its flowers are edible; when sauteéd they are similar to mushrooms.
- Its stems have been compared to asparagus.

The only negative characteristic pointed out by writers is that, because it is a vine (it is a perennial that grows to 9–12 feet), the winged bean must be staked, which is a costly process and inhibits its production over large acreages. But with the large scale agricultural experimentation now being conducted in 50 countries, the hope is that genetically short varieties will be found.

Perhaps as amazing as the many benefits the plant offers is that its protein value has been recognized since 1929, but the winged bean was ignored for almost half a century—until 1975, it was neglected everywhere except in Papua New Guinea and Southeast Asia; even there it was considered a poor man's crop and received little research attention. But in 1975, the United States National Academy of Science published a study of *P. tetragonolobus*, pointing out its merits and urging its development.

If you are interested in seeing specimens of the winged bean, it will be grown in the Demonstration Vegetable Garden this summer and will be at its peak in July.

Legumes

One of the most important plant families, the Leguminosae (pea family) is also one of the largest, ranking third in size behind the orchid and sunflower families. It is second only to the cereals (grasses) as a source of food for humans, being extremely rich in proteins—containing two to three times the protein of cereal. Legumes also contain certain amino acids which complement those found in cereals; a mixture of legumes and cereals can produce a properly balanced diet.

In addition to being a major food source, legumes also provide timber trees, dyes and tannins, gums and resins, oil, medicines and insecticides. Many also have ornamental value.

The family is found throughout the world, from moist tropical regions to deserts to temperate regions.

Important members of the family include (aside from the pea, soy, and winged bean) the peanut, lentil, licorice, and bean (for food); alfalfa and clover (for fodder); and broom, locust, redbud, wisteria, and Kentucky coffee tree (for ornament).

A Miracle Ornament of Cure



Miracles turn up in the least likely times and places; that in fact is the nature of them: something expected cannot be a miracle. Take the case of the small, pleasant Madagascar periwinkle, for example.

The Madagascar periwinkle is a pretty flower, with its sometimes rose-pink, sometimes white petals. Gardeners like it because it's relatively easy to grow. But there is more—much more—to it than its aesthetic qualities.

Scientists have found that this attractive flower is the source of some 75 alkaloids (plant produced nitrogen compounds which can affect animal—including human–physiology). Two of these alkaloids—vincaleukoblastine (also called vinblastine—VLB) and leurocristine (vincristine—VCR) have shown remarkable effects in the treatment of leukemia and Hodgkin's disease.

The two alkaloids have been, in fact, called miracle drugs since they are now used so successfully and so widely even though they have only been known in the last quarter century.

(continued on page 11)

Madagascar, an island country off the southeastern coast of the African continent, is 226,658 square miles—just over three times the size of Missouri. It is one of the most biologically interesting areas of the world—more than 12,000 species of plants occur in this small nation (half of these are found nowhere else in the world) while only about 30,000 species occur in all of tropical Africa. (About 1,900 species occur in Missouri.)

Unfortunately, the island is—biologically—one of the most threatened areas on earth—only about 10 million acres (or 7% of the total area) remain in natural vegetation. Garden botanists anticipate that it is unlikely there will be any significant opportunities to study Madagascar's natural vegetation after this current decade.

Plants with the potential to be as valuable as the Madagascar periwinkle could be lost forever.

Because of this, the Missouri Botanical Garden has begun several projects to study the flora of Madagascar. Articles about these projects will appear in future issues of the Bulletin.



Grass in Shady Areas

Probably one of the most frequently asked lawn questions I encounter is "How can I get grass to grow in a shady spot?" Sometimes, unfortunately, the answer is to forget about trying to grow grass in a very shady area. You will have much more success if you plant a shade-tolerant ground cover such as *Pachysandra* (spurge), *Vinca minor* (myrtle) or *Ophiopogon* (dwarf mondo grass). *Ophiopogon* is a beautiful ground cover which is found throughout the Garden, but is especially prevalent in the Japanese Garden. In addition to having attractive, dark-green glossy foliage during the summer, it has a pale purple flower spike in late summer. If you have a spot that is in dense shade, such as under large conifers, it is probably best to mulch this area with shredded or chunk bark or crushed stones, and not to plant anything.

Grass requires a minimum of three to four hours of direct sunlight daily or all-day filtered sunlight such as might be provided by large oaks or maples. If you can provide this basic light requirement, here are some other guidelines from lawn experts at O. M. Scott and Sons to help improve the grass growth in shady areas:

—Prune or thin tree branches to improve light and circulation of air.

—Sow grass seed in the spring before the tree leaves appear.

—Use a seed mixture of grasses that grow best in restricted sunlight.

—Use a fertilizer at seeding time designated to give new seedlings a boost. This is usually a high phosphorus fertilizer. (Phosphorus is the middle number on the fertilizer bag.)

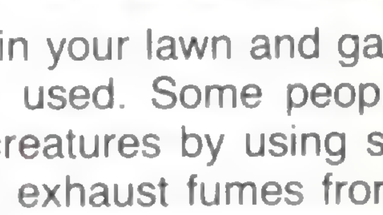
—Fertilize in early spring or late fall when leaves are off the trees.

—Water and feed more under the drip lines of the trees, to compensate for the competition of tree roots.

—Mow grass in shaded areas a half-inch longer to increase blade surface area to "catch" more sunlight.

—Consider applying a lawn disease preventer in spring and fall, since turf diseases are more active in moist and shaded areas.

—Remove tree leaves in early spring and fall to keep them from smothering the grass.



Mole Control

Moles can be aggravating pests in your lawn and garden. Many different control methods are used. Some people try various techniques of killing these creatures by using spring traps, by gassing their runways with exhaust fumes from the lawn mower or pellets, or by flooding the moles out by sticking a water hose into their burrow. Some people also repel these creatures by placing moth balls in their runways. Probably the best long-term control is to eliminate their food source—grubs and other lawn insects. You can do this by using chemical or biological controls.

Spectracide (Diazinon) is probably the most commonly used chemical control. This material should be applied in early to mid-August. Most people prefer to use the granular form of this chemical; it can be put on with a lawn spreader. It is most important that this chemical be watered in thoroughly (apply at one-half inch of water) after application to insure that it penetrates the soil to a level where the grubs are feeding.

You can apply to your lawn a biological control material called Milky Spore Disease which contains the spores of a couple of different bacteria that infect and eventually kill Japanese beetle larvae (grubs) and many other species of beetles. You must be patient when using this material, however, since it usually takes one to three years for effective control with Milky Spore Disease.

SHOVEL, HOE, RADIO

Steve Frowine, Public Horticulture Specialist, will appear on KMOX-AM (1120 on the dial) as follows:

Friday—June 3 3-4 p.m.	*Major Topic: Roses*
Saturday—June 18 2-3 p.m.	*Major Topic: Container Garden*
Thursday—July 7 2-3 p.m.	*Major Topic: Summer House Plant Care*
Saturday—July 16 1-2 p.m.	*Major Topic: Summer Gardening*

Rosarian Dave Vismara will appear on KFUO-AM's "How Does Your Garden Grow" on Thursday, June 16, from 9:30-10:00 a.m. KFUO-AM is 850 on the dial.



Yellow Jackets

Because of our very mild weather, yellow jackets will be in great abundance this summer. These bothersome wasps are frequently confused with honeybees. They seem to materialize out of nowhere to annoy us while we are gardening, mowing our grass, or enjoying a picnic. Their nests are located several inches underground. If you can locate this nest, you can apply Sevin or Diazinon to the soil around the nest for control.



Blossom-End Rot on Tomatoes

If the bottom centers of your tomatoes are turning black, your plants have a very common physiological problem called "blossom-end rot." This problem shows up when we have hot, dry weather. To prevent it, you should make sure your plants get adequate moisture. You can do this by applying a heavy, three to five inch layer of organic mulch such as straw or compost, and by making sure that your plants receive at least one inch of water per week. If blossom-end rot has been a recurring problem in your garden despite efforts to keep the plants well-watered, it may be advisable for you to add some calcium in the form of ground limestone to your garden next year.

—Steven A. Frowine, Public Horticulture Specialist

A Garden Party with Bobby Short

Joan Dames, writing in the *St. Louis Post-Dispatch*, called it, "An elegant party." Indeed.

Almost 350 people attended the Garden's first benefit since 1976 on April 23. Featuring the music of Bobby Short—called by many the premiere cabaret performer in America—and some culinary magic by the Omelet Man, Rudy Stanish, the benefit was planned by a committee chaired by Mrs. Robert R. Hermann, Mrs. Warren M. Shapleigh, and Mrs. Walter G. Stern. The corporate sponsor for the event was Stix, Baer and Fuller Co., who also provided the decorations.

Benefactors of the Garden Party included Mr. and Mrs. Joseph Ruwitch, Mr. and Mrs. Sydney M. Shoenberg, Jr., Mr. and Mrs. C. C. Johnson Spink, and Mr. and Mrs. Donald D. Wren.

Patrons were Mr. and Mrs. Whitney R. Harris, Mr. and Mrs. Stanley N. Hollander, Mr. and Mrs. Melvin Friedman, Mr. and Mrs. Donald O. Schnuck, Mr. and Mrs. Charles G. Schott, Jr., Dr. and Mrs. Donald Ross, Mr. and Mrs. Orrin S. Wightman, III, Mrs. G. S. Kieffer, Fielding Lewis Holmes, Mrs. Herman T. Pott, Mrs. Hermann F. Spoehrer, and Mrs. Robert West, and Mr. Alan E. Doede.
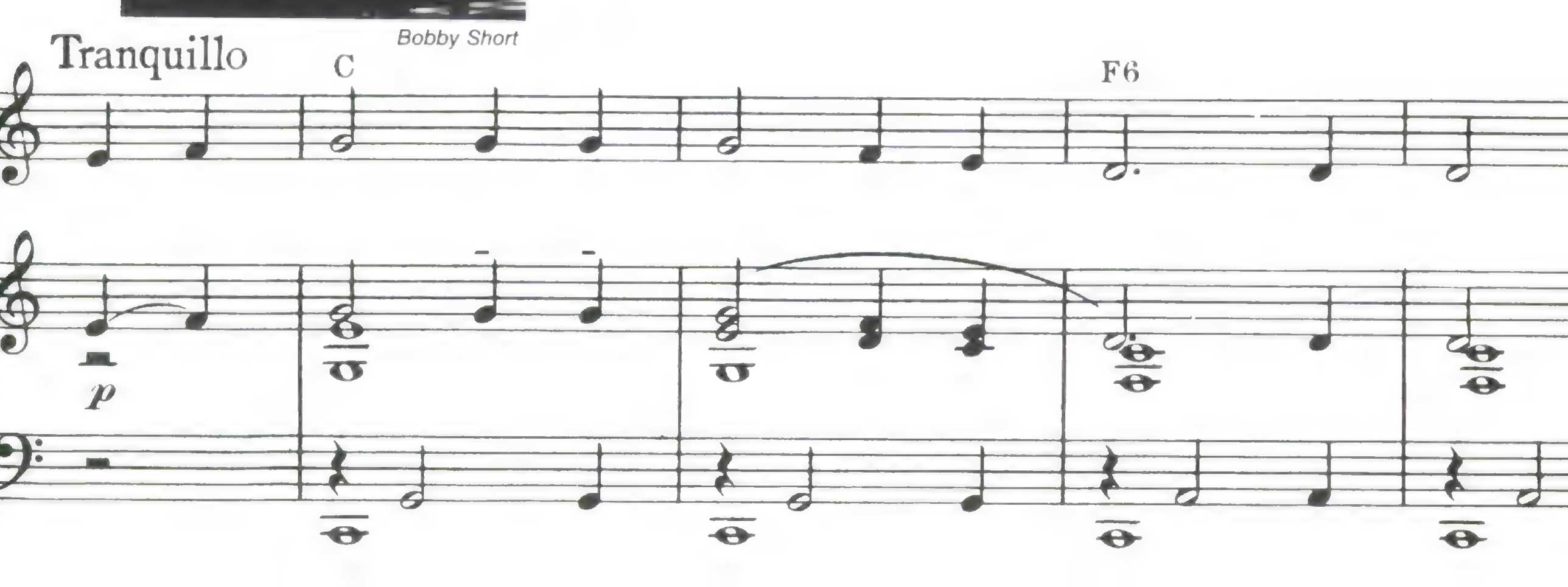


At the Benefit, left to right: Mr. and Mrs. Don Williams of Dallas, Mr. Robert Kresko (a member of the Garden's Board of Trustees), Mrs. Tommy Farnsworth of Memphis, Mrs. Robert Kresko, and Mr. Tommy Farnsworth.



With Bobby Short are the Benefit Committee Co-Chairmen, Mrs. Warren M. Shapleigh, Mrs. Robert R. Hermann, and Mrs. Walter G. Stern.



Bobby Short







Mr. Sydney M. Shoenberg, Jr., Ms. Betty Howe, and Mr. C. C. Johnson Spink at the Benefit. Mr. Shoenberg is a Garden Trustee; Mr. Spink, President of the Trustees.



Arriving are, left to right, Mr. and Mrs. Don Ray and Mr. Paul Cavalli. Mr. Ray is President of Stix, Baer, and Fuller; Mr. Cavalli, Vice-President. Stix was the corporate sponsor of the Benefit.



Serving one of his world-famous omelets to Bobby Short is culinary magician Rudolph Stanish.

One of the souvenirs of the Garden Party was a cookbook of omelet recipes, *Omelets, Crepes, and other Recipes for the Missouri Botanical Garden* by Rudolph Stanish. It's now available, along with Rudolph Stanish's custom designed omelet pan, in the Garden Gate Shop. Here's a sample from the book:

MOUSSELINE OMELET
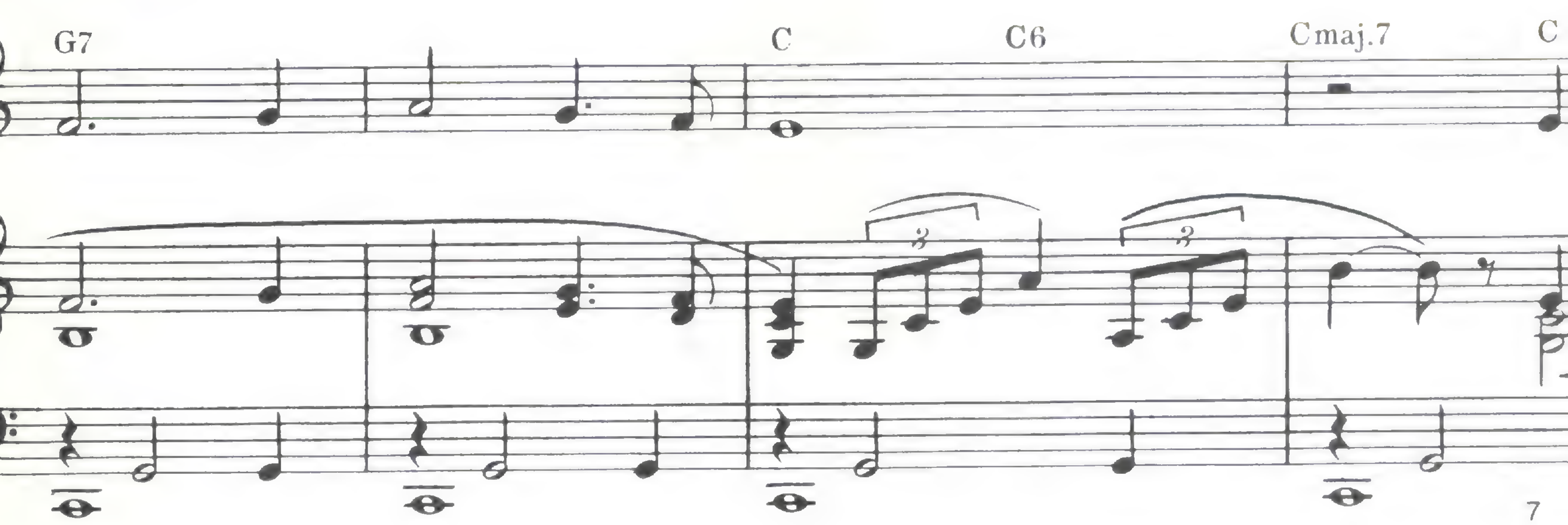
(A sweet for two)

3 eggs
1 tablespoon butter
3 tablespoons sugar
3 tablespoons preserve

Separate the eggs. Beat the whites with 1 tablespoon of sugar till glossy and stiff. Using the same beater, beat the yolks with the remaining sugar till creamy and lemon colored. Combine both of these mixtures.

In hot omelet pan melt 1 tablespoon butter and pour in mixture. Spread over the entire surface of pan and when sides are brown, hold under the broiler to brown and set. Only takes one minute.

Spoon the apricot preserve close to the handle. With a spatula, fold over (rather than roll) onto a hot oval dish. Dust with confectioners' sugar and eat hot. May be flamed with 3 tablespoons of Irish Mist.



FOR Younger MEMBERS

Come To The Japanese Festival

Plan to take part in a workshop or a special event designed just for children.

- Fold and re-fold paper to create an origami creature.
- Listen to the fairy tales told to Japanese children.
- Make a kite and try to fly it.
- Learn to arrange flowers and branches in a traditional way.
- Watch a selection of children's films about Japan.

The workshops will be limited to the first 40 students ages 8 to 12 who arrive at the Beaumont Room. Workshops will begin at 1 p.m. For more information and a schedule of events call: 577-5181 after June 6.



Want To Learn More?

Join us for *A Touch of Japan.* Ten to twelve year olds who take part in the program will spend a week exploring the customs, people, and gardens of Japan. Using the 14-acre Japanese Garden as inspiration, participants will write haiku, design flower arrangements in the Japanese style, make dry gardens, and experience other aspects of this unique culture. Bring your own bag lunch; everything else is provided.

One 5-day session: August 1 through August 5, 10:00 a.m. to 3:00 p.m., Ridgway Center.

Fee: Members $38.00, Non-members $42.00.

For registration and more information on this and other summer programs check *The Summerscape Press* or call 577-5140.

Treasures To Discover

ANNOUNCING . . . that something special has been created for children who visit Shaw's Garden! A new "Discovery Map of the Missouri Botanical Garden," available at both the ticket counter and the Garden Gate Shop, is filled with treasures to find along each Garden pathway. One side of the map includes drawings and quotes from children who have visited the garden, while the other side lists suggestions for fun ways to use the map. Be sure to ask about the "Discovery Map of the Missouri Botanical Garden" next time you visit!

Did You Know

In Japan, families do not celebrate Mother's Day or Father's Day. Instead two children's days are celebrated. **The Boys' Festival** was originally a Chinese festival to ward off sickness during the rainy season. After the festival was introduced to Japan, it came to be regarded as a festival for boys. Families with boys flew carp streamers over their homes in honor of boy children. The carp symbolized strength and endurance, characteristics that the Japanese wanted for their sons. **The Doll Festival** or **Peach Festival** is for girls. Originally it was part of a purification ritual. Small paper or wooden dolls, set adrift on rivers or the sea, were believed to carry away troubles. Today the festival has been changed into a display of dolls on special tiered stands decorated with peach blossoms.

Word Search

There are 15 objects found in a Japanese garden hidden in this puzzle. How many can you find? Look up, down, across, and diagonally.

I T E A H O U S E S
S A N D O N M W L N
L O T U S A S A N O
A A R C B T E T E W
N C K O M U E E D L
D A N E I R R R R A
B R I D G E T F A N
R P I D Y S M A G T
E O T P O C U L Y E
R A C O P H L L R R
N T L K E L P A D N
E R N E S Y E Y A R
W A T E R B A S I N

BRIDGE
CARP
DRY GARDEN
ISLAND
LAKE
LOTUS
NATURE
PLUM TREE
RIPPLE
ROCKS
SAND
SNOW LANTERN
TEA HOUSE
WATER BASIN
WATERFALL

Water, Water Everywhere!

A visitor to the Japanese Garden cannot help but notice the sights and sounds of water. The movement of water as it cascades, trickles, or ripples often has a soothing effect on the observer. Young children can learn a great deal about the properties of water by playing with it. Try working with water in two of its forms: liquid and solid.

You will need: Old rubber boot, rubber glove, children's clay molds, cookie molds, a cone-shaped paper cup, or other objects that can be filled and frozen; sink filled with water; rubber band; salt.

What to do: Experiment with water in its liquid state by filling several of the containers listed above with water. Will a water-filled rubber boot float in a sink filled with water? What happens to the shape of the rubber glove if extra water is forced into its "fingers"? Pour water from one container into another. Does the water "fit"?

Place the water-filled boot into a freezer. Use a rubber band to close the open end of the rubber glove, and place the water-filled glove into the freezer. *Since water expands when it freezes, be sure to leave some empty space at the top of each container.*

Place as many other filled containers into the freezer as space will allow. The next day, remove the frozen containers from the freezer. Run warm water over the ice molds to release the frozen shapes. Fill a sink with water and test whether or not the ice shapes can float.

Observe the melting process for a few minutes. How does the shape of ice change during melting? Sprinkle some salt on the ice shapes. What does this do to the melting process?

Talk with your child about how both of you were able to change the shape of water by pouring, freezing, and melting. Make yourselves a frozen treat by pouring liquid fruit juice into your favorite ice mold!

—'Til next issue,
The Education Department

CALENDAR

When you plan your summer, think about us:

June

In the musical, June was busting out all over. In the Garden, it's doing the same. The roses will be (as always) first class (remember, the Anne L. Lehmann Rose Garden is the 1983 Rose Garden of the Year for the A.A.R.S.) and the events will be the same. Consider this schedule:

JUNE 1-4

June 1: **Haiku Exhibit**, Climatron (through June 30). A month of plants interpreted through haiku written by area students.

June 2: **Purple Martin Day**, Ridgway Center and Grounds, 6:30 p.m., a celebration of the wonderfully acrobatic bird that does us a great service: each purple martin consumes somewhere around 2,000 mosquitoes a day.

June 4: **Disney Cartoon Festival**, Shoenberg Auditorium, noon. What's a childhood without Disney (even if the childhood extends into the 30s or 60s or 90s)? $1 for Members; $1.50 for Others.

JUNE 5-11

Continuing: **Haiku Exhibit**

June 9: **Rose Evening** (see enclosed invitation)

JUNE 12-18

Continuing: **Haiku Exhibit**

June 18: **Japanese Festival**, Garden Grounds. It's become one of the high points of being in St. Louis in June. Through June 26.

Bonsai Exhibit, Floral Display Hall. Come see one of the most fascinating arts on earth. (Also through the 26th.)

Ibekana Society Show, Floral Display Hall. The Society members do amazing things with flowers; try to *arrange* your schedule to see this exhibit. (Okay, the joke is obvious. But the art of ikebana is subtle.) (Again, through the 26th.)

JUNE 19-25

Continuing: **Japanese Festival**
Bonsai Exhibit
Ikebana Society Show
Haiku Exhibit

JUNE 26-30

Continuing: **Japanese Festival** (ends June 26)
Bonsai Exhibit (ends June 26)
Ikebana Society Show (ends June 26)
Haiku Exhibit (ends June 30)

July

All together: Happy Birthday to you; Happy birth . . . there are two birthdays this month. Henry Shaw's number 183; the Ridgway Center's 1st. Come celebrate with us.

JULY 1-9

July 1: **Cycad Exhibit**, Climatron (entire month). Cycads are some of the most primitive plants still around—they go back to the Mesozoic era—and were contemporary with the dinosaurs.

July 9: **Incredible Journey**. Shoenberg Auditorium. Noon. Another great Disney flick. $1 for Members; $1.50 for others.

JULY 10-16

Continuing: **Cycad Exhibit**

JULY 17-23

Continuing: **Cycad Exhibit**

July 17: **Ridgway Center Anniversary**. Ridgway Center. Can it really be a year already? Yes, it is. Come celebrate it.

July 22-24: **Midsummer Night Movies**. Shoenberg Auditorium. Come dance your cares away (or come even if you have no cares) with Fred and Ginger. Astaire and Rogers, that is, in *Top Hat* and *Shall We Dance?* At 7:30 on 7/22-23, with a 2 p.m. matinee on 7/24. $2 for Members; $2.50 for others.

JULY 24-31

Continuing: **Cycad Exhibit** (ends July 31)

July 24: **Henry Shaw's Birthday**, Ridgway Center and Grounds. The Garden's founder's 183rd birthday party features clowns and cake. Come one and all.



Classes

*Even though it's summer, classes are still in session at the Garden. A few notes about the listings below: 1.) Those marked with * are for adults; all others are for children. 2.) Class listings for children include age range for specific classes; ranges in parentheses after class title. 3.) Date listed in margin is date of first class meeting 4.) Want information about registering or want a course brochure for details? Call the Education Department at 577-5140. 5.) All classes meet at the Garden except those marked with (A); these are held at the Arboretum.*

June 4 — ***Cahokia Mounds** (Family) 9 a.m.-3 p.m.
***Summer Rose Care** 9 a.m.-noon

June 5 — **Biological Communities** 2-4 p.m.

June 10 — **Evening Hike (A) (Family) 8-10:30 p.m.**

June 11 — ***Pest and Weed Control** 9-11 a.m.
A Fish Named Carp (4-6) 10:30 a.m.-noon

June 13 — **Creating with Clay** (7-12) (Five meetings) 9:30-11:30 a.m.

June 20 — **ECO-Reach** (8-14) (Two weeks) 8:45 a.m.-noon

June 25 — ***Idea Gardens** 9 a.m.-2 p.m.

June 27 — **Pencil Sketching** (10-12) (Five meetings) 9:30-11:30 a.m.

June 28 — **Sense of Wonder** (A) (7-10) (Five days, including overnights)

July 8 — **Evening Hike** (A) (Family) 8-10:30 p.m.

July 9 — **Festival Day** (4-6) 10:30 a.m.-noon

July 11 — **Multi-Media Arts** (7-12) (Five meetings) 9:30-11:30 a.m.

July 12 — **Happy Trails** (A) (10-13) (Five days, including overnights)

July 13 — **Energy, Food, and You** (10-12) 10:30 a.m.-2 p.m.

July 16 — ***Maintenance and Late Planning** 9-11 a.m.
My Own Rock (4-6) 10:30-noon

July 20 — **Parsley, Sage, Rosemary, and Thyme** (10-12) 10:30 a.m.-2 p.m.

July 23 — **Water, Wet or Dry** (4-6) 10:30-noon

July 25 — **Painting with Acrylics** (12-15) (Five meetings) 9:30-11:30

July 27 — **Pollen, Petals, and Petunias** (10-12) 10:30 a.m.-2 p.m.

Places to see...

An adjunct to the already popular hardy rock garden outside the Mediterranean House was recently installed. Given in memory of Audrey Heckman by her husband, Mr. William Guy Heckman, and their children, the garden—on the north side of the Climatron and along the path leading to the Mediterranean House—contains plants suitable for rock gardens in the St. Louis area including species of tulips and narcissus, centaurea, spanish bluebell, angel's tears, and grape hyacinth; many are native to Mediterranean regions. The original hardy rock garden outside the Mediterranean House is being enhanced also in memory of Mrs. Heckman, made possible through the generosity of Mrs. Heckman's mother, Mrs. Arnold Stifel. . . . . .



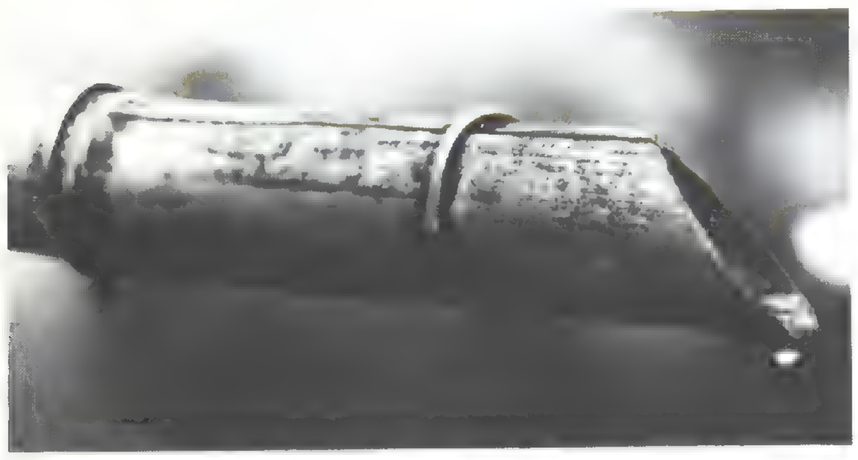


The Scented Garden looked so spectacular, we wanted to bring you a picture of it. Located just north of the Hosta Garden along the Garden's east wall, the Scented Garden was designed to allow visitors the chance to experience nature through senses other than sight—including smell, taste, and touch. It was made possible through the generosity of Isabelle Lowis Zimmerman as a gift in memory of her grandmother, Susannah F. Mack, and her mother, Lilliam C. Lowis. . . . . .





In summer, what is as cool as a fountain?



Basin, Japanese Garden



Japanese Garden



Shapleigh Fountain



The Shoenberg Fountain



Latzer Fountain



The Strauch (Angel) Fountain

Subdistrict

(continued from page 3)

There will be some changes at the Garden with the passage of Proposition 4. Most importantly, the admission rate will be reduced once the Subdistrict is fully established. Children 12 and under will be admitted free, as will people aged 65 and above. Admission—for adults (17-65)—will be $1 and $.50 for children 13-16. On Wednesday, Thursday, and Saturday mornings, the Garden will be free to visitors. Income in 1983 from the new tax is anticipated to offset loss of revenue due to reduced admission prices. The first real increase in revenue to the Garden will come in 1984.

The Zoo-Museum District was created in 1972 when City and County voters approved a property tax of 9¢ per $100 assessed valuation for the support of the Zoo, the Art Museum, and the Museum of Science and Natural History. In the April 5 election, in addition to approving tax support for the Garden, voters also approved increased support for each of the three original members of the District.

Ornament of Cure

(continued from page 4)

Vinblastine has been shown to be tremendously effective against Hodgkin's disease; vincristine especially against acute childhood leukemia. In specific programs of treatment, vinblastine can lead to total remission in close to 80% of patients with Hodgkin's disease, while vincristine, in combination with certain other drugs (including steroids) can bring about total remission in more than 90% of children suffering from certain types of leukemia.

These results are probably enough in themselves to qualify the Madagascar periwinkle as a miracle plant. But the story is more involved yet—a paradigm that important discoveries are still sometimes made by chance.

In the late 1950s, researchers at a Canadian university were investigating the use of the Madagascar periwinkle in the treatment for diabetes as part of a wider project in which they were attempting to discern the medical validity of certain folk cures. This periwinkle had been cited in certain folk medicine traditions as a treatment for diabetes.

While they were unable to clinically confirm the plant's use against diabetes, they observed that extracts of the plant drastically reduced the number of white blood cells and depressed bone marrow activity in rats. Since leukemia originates in body tissues including bone marrow and is usually manifested by extremely high white blood cell counts, the scientists were led to explore the Madagascar periwinkle as a source for a treatment of the disease.

The Madagascar periwinkle (*Catharanthus roseus* and sometimes called *Vinca rosea*) will be on display on the Spoehrer Plaza this summer with interpretive signs. A member of the dogbane family and related to rauwolfia (from which comes reserpine, an alkaloid used to treat hypertension), *C. roseus* is naturally a tropical perennial but can be cultivated as an annual in temperate regions. As its common name implies, it is native to Madagasar.

Notes from the Garden

New Members, Officers for Members' Board

At its May meeting, the Executive Board of the Members installed Mrs. Walter G. Stern as its President; she also served as President from 1969-1972, and from 1977-79. She succeeds Mrs. Shadrach F. Morris, Jr., who was President since May, 1981.

Also installed as officers were Mrs. Rudyard K. Rapp (First Vice President), Mrs. Pedrick Conway (Second Vice President), Mrs. Charles Cook (Treasurer) and Mrs. Bruce K. Yoder (Secretary).

The Board also appointed 14 new members: Ms. Elaine Alexander, Mrs. Walter F. Ballinger, Mr. William Adair Bernoudy, Mr. J. J. Landers Carnal, Mr. William Frank, Mr. W. Ashley Gray III, Mr. George Hasegawa, Mr. Jack Jennings, Mrs. James S. McDonnell, Mrs. Sewell A. McMillan, Mr. David Murray, Mr. Tom Schlafly, Mr. Don Wolfsberger, Mrs. Andrew Zinsmeyer, and Mrs. Louis I. Zorensky.

The new board members will serve a three-year term and will be involved in various aspects of the Garden's Membership program.

We wish to thank Mrs. Shadrach F. Morris, Jr., the Past President of the Board, and her officers, Mrs. Bernard Brinker (Second Vice President), Mrs. Walter F. Stern (First Vice President), Mrs. Rudyard K. Rapp (Secretary) and Mrs. Charles Schott (Treasurer) for their dedication and service.

—Patricia R. Arnold, Membership Services



Executive Board Officers are (l. to r.) Mrs. Rudyard K. Rapp, 1st Vice President; Mrs. Charles Cook, Treasurer; Mrs. Walter G. Stern, President; Mrs. Bruce R. Yoder, Secretary; and Mrs. Pedrick Conway, 2nd Vice President.



Mrs. Shadrach F. Morris, Jr., receives a gift from William R. Orthwein, Jr., First Vice President of the Garden's Board of Trustees. Mrs. Morris was honored at the Board's April meeting for her service as President of the Executive Board of the Members.

Peter H. Raven, Director of the Missouri Botanical Garden, has been unanimously elected a director of the World Wildlife Fund-U.S., the United States affiliate of the international World Wildlife Fund.

The WWF-U.S. is the nation's largest non-profit, private organization making conservation grants. It is one of 24 affiliates of the international organization. Since the WWF was established in 1961, the fund has made grants totalling more than $65 million for some 3,000 scientific research, education, and habitat and wildlife preservation projects in more than 130 countries. . . . . .

Garden Honor Honored

Annually since 1980, the Garden has honored individuals for their achievements in landscape design or for work leading to the improvement of urban environments with the Albert P. and Blanche Y. Greensfelder Medal. Now the Garden is being honored for the award itself.

The Greensfelder Medal, designed by artist Karen Krager, was selected as one of less than 70 medals to represent the United States in the XIX International Medallic Exhibition in Florence, Italy, this fall. The exhibition is sponsored by the Federation Internationale de la Medaille (FIDEM), the most important organization of medalists in the world.

Approximately 1,000 medals designed by American artists were considered for inclusion in the exhibition, called by John Cook—Professor of Art at Pennsylvania State University and the official U.S. delegate for FIDEM—the most prestigious exhibition of medals in the world.

The first exhibition was held in 1937 in Paris; exhibitions have been held every two years since then in major European cities. Cook estimated that 2,000 medals created by artists from around the world would be shown in the exhibition.



Established in 1980 through the Albert P. and Blanche Y. Greensfelder Fund, the Greensfelder Medal has been awarded to Wayne C. Kennedy, August A. Busch, Jr., Leonard Hall, and, most recently, to Roberto Burle Marx. (An article about the award to Mr. Burle Marx and the address he delivered in conjunction with the award will appear in the next issue of the *Bulletin*.)



Mrs. David J. (Patty) Lehleitner, one of the Garden's 500 indispensible volunteers. Mrs. Lehleitner has given more than 2,000 hours working in the Director's office since 1976.

New Caledonia, Cameroon, St. Louis

New Caledonia and Cameroon are thousands of miles apart, each touched by a different ocean: tiny New Caledonia, an island in the Pacific; Cameroon, on the African South Atlantic Coast. But the two places are connected in St. Louis by two organizations: the Missouri Botanical Garden, which conducts research in both areas, and the Harry and Flora D. Freund Memorial Foundation, which helps to support the research.

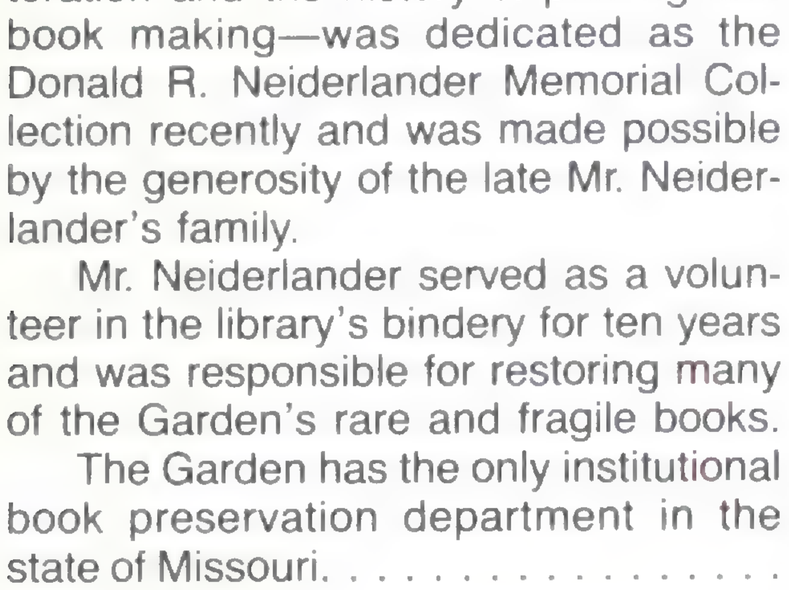
In July, 1978, the Freund Foundation began supporting the work of Dr. Gordon D. McPherson, a Garden botanist who resides and works full-time on the island of New Caledonia. McPherson collects plant specimens and conducts field studies there, providing the Garden and other botanical institutions with examples of some of the world's rarest plants. New Caledonia was, 80 million years ago, a part of Australia. Since then it has broken away from the continent and drifted northeastward. When it broke away, it carried with it many primitive plants now found nowhere outside of the island's 7,400 square miles. In effect, McPherson's work, which was supported by the Freund Foundation beginning 5 years ago, is carried out on a living museum of unique scientific importance.

Earlier this year, the Foundation began supporting a second Garden research project—the work now conducted by Dr. Duncan W. Thomas in Cameroon. Thomas is conducting field studies in forests in the southwestern part of the country; these forests have been identified as the most species-rich in all of Africa. (Thomas' work was reported in the April *Bulletin*.)

Because of economic pressures in both New Caledonia (it is being strip-mined for its rich nickel deposits) and Cameroon (its timber is being cut), the natural areas are disappearing rapidly, making the work of Drs. Thomas and McPherson even more vital and urgent.

Explaining the Foundation's interest in and support of these projects, Mr. S. E. Freund, President and Treasurer, said, "I've had a fondness for the Garden for a long time. When the New Caledonia project was proposed five years ago, we felt it was an area in which little had been done and in which much could be accomplished. The Cameroon project was interesting for the same reasons."

The Harry and Flora D. Freund Memorial Foundation was established in 1953 in memory of Mr. Freund's father, who died in 1949. It supports research in medicine, education, and social services, in addition to the Garden's botanical research.



Ann Niederlander (r), wife of the late Donald Neiderlander, at the dedication of the collection.

Part of the Garden library's extensive holdings—the collection of material pertaining to book preservation and restoration and the history of printing and book making—was dedicated as the Donald R. Neiderlander Memorial Collection recently and was made possible by the generosity of the late Mr. Neiderlander's family.

Mr. Neiderlander served as a volunteer in the library's bindery for ten years and was responsible for restoring many of the Garden's rare and fragile books.

The Garden has the only institutional book preservation department in the state of Missouri. . . . . .

This bookplate will appear in all of the several hundred books and pamphlets in the Neiderlander collection.



The Garden and St. Louis lost one of its best friends on April 13 when Morton D. May died. Known to many as Buster May, he was a major force behind the cultural vitality of the community; his commitment to a high quality of life and to the support of the area's cultural institutions extended to the Missouri Botanical Garden. Through his work with the Louis D. Beaumont Foundation, he was responsible in a large way for the construction of the John S. Lehmann Building (center of the Garden's botanical research program) and the Beaumont Room (the multipurpose room in the education wing of the Ridgway Center).

He also gave his time, effort, and support for the development of the Gateway Arch, St. Louis Centre, the Pius XII Library at St. Louis University, and the Jewish Community Center now located at Lindbergh Blvd. and Schuetz Road. . . . . .



Morton D. May

If you're enchanted by the Japanese Garden and enticed by the Japanese Festival, this fall there's an opportunity you ought to look into:

From November 4 until November 20, the Garden will sponsor a tour to Japan. Led by Alan Godlewski, the Garden's Chairman of Horticulture and an experienced traveler—Mr. Godlewski visited both China and Japan as part of the Garden's extensive exchange programs with both nations in 1981—the tour will visit Tokyo, Mount Fuji, Okayama, and Osaka. Visitors will see the Imperial Palace, 16th Century castles, museums, and of course gardens. They'll ride the famous Bullet Train, and cruise the serene Inland Sea and see the internationally famous Chrysanthemum Festival at Hirakata.

If you're interested in spending two weeks in one of the world's most exotic countries, contact Travelers' Choice at 961-5080. . . . . .

And there's more:

If you'd like to visit the Far East this winter (from January 21st until February 9) we're going to Hong Kong, Bangkok, Singapore, Jakarta, and Manila (to name only a few of the places). The trip will be led by Steven A. Frowine—Public Horticulture Specialist—who has led some of our most popular tours. Travelers will see some of the world's most ancient gardens. If you want to find out more, contact Sante Travel at 726-3040.

. . . . . .

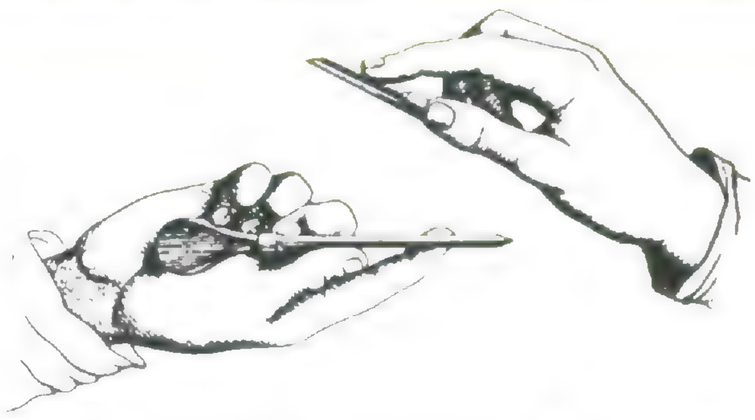
The Garden is participating in St. Louis' Operation Brightside, the major effort to beautify the city. Through Project Flower Shower, every student in the city's 170 public and parochial schools was given 12 flowers to cultivate in trays on classroom windowsills and to later plant on school grounds, vacant lots, and other public areas. Outstanding efforts will be recognized by awards given on August 15 at the Garden.

A second program, Project Blitz, offered neighborhood groups and churches 300,000 seedlings for public plantings.

As in Project Flower Shower, outstanding efforts will be recognized on August 15.

Plantings must be completed in the current year, and applications by groups interested in being considered for the awards in both Projects must be completed by July 1. Applications may be obtained by calling the Garden at 577-5140 or Operation Brightside at 622-4203. . . . . .

The Master Gardener program, a joint venture between the Garden and the University of Missouri Extension Service, enters its second year this fall. It provides an opportunity for the experienced amateur horticulturist to receive comprehensive and practical training in an eight-week course. There is no tuition charged for the program, but participants are required to perform volunteer work related to horticulture within the community after graduation. Certified Master Gardeners—13 were graduated in the first year—already conduct plant clinics, work with students to establish school gardens, assist in the Arts for Older Adults program, and are a major part of the Garden's and Extension Service's public outreach programs. For an application, interested persons should contact the Garden's Education Department at 577-5140; participation is limited to 30 for this year. The application deadline is August 26. . . .



The Second Annual Fall Craft Fair is set for Saturday and Sunday, October 8 and 9. Last year 10,000 people attended the first Fair, which featured crafts ranging from paper marbling and watercolors to needlework and dried flower arrangements. Persons interested in displaying, demonstrating, selling their handiwork should send a self-addressed, stamped envelope with a request for an application to the Fall Craft Fair Committee, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166. Since space is limited, applications should be submitted as soon as possible. Notifications of space assignments will be made July 30. . . . . .

New Members

Contributing Members
Dr. and Mrs. James H. Allen
Mr. and Mrs. Leslie Armontrout
Mr. and Mrs. Robert G. Asperger
Mr. and Mrs. Paul Brackman
Mr. and Mrs. Edward J. Buchholz
Mr. and Mrs. James S. Campbell
Mrs. Violet Cerutte
Mr. and Mrs. Tom DeBenedetti
Dennis J. Diez
Mrs. Wm. F. Dohrmann
Heimburger, Inc.
Mr. Bill Horner
Mr. and Mrs. James R. Kaye
Kimberly Korman
Mr. Albert E. Kreher
Ms. Mary E. Mahoney
Mrs. Mary Marschalk
Mr. J. S. McKay, Jr.
Mr. and Mrs. Edward L. Meiser
Mr. and Mrs. Robert Narmont
Mrs. John F. O'Neil, II
Mr. and Mrs. Jay D. Proops
Mr. and Mrs. Gilbert L. Rochan
Dr. Maxwell Ruchlin
Mrs. Dorothy Ryan
Mrs. David C. Ryder, Sr.
Mr. and Mrs. Calvin E. Scher
Mr. and Mrs. David Shelton
Miss Marjorie A. Triphaus
Mr. and Mrs. Timothy T. Walsh
Mr. and Mrs. J. D. Wells
Mr. and Mrs. Myers E. Williamson
Dr. and Mrs. Vallee L. Willman
Mrs. George Winter, Jr.
Mr. and Mrs. Albert Young

Sustaining Members
Mr. and Mrs. Richard J. Detweiler
Mr. and Mrs. Lucien R. Fouke, Jr.
Mr. Joe H. Hunt
Mr. and Mrs. Arthur J. McDonnell
Mr. and Mrs. Donald E. Schmittzehe

Sponsoring Members
Mr. and Mrs. Robert Irwin
Mr. and Mrs. David W. Mesker

Increased Support

Contributing Members
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Mr. and Mrs. Alvin J. Bockwinkel
Mr. and Mrs. Erwin F. Branahl
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Mr. and Mrs. W. J. Castellani
Mr. and Mrs. John T. Clark
Compton Hill Dental Office
Mr. and Mrs. John W. Cross
Mr. and Mrs. David A. Eppestine
Mr. and Mrs. Paul D. Erhart
Mr. and Mrs. Gregory S. Fletcher
Mr. and Mrs. Mark Glass
Mrs. Samuel F. Gordon
Mrs. Stanley Hanks
Mr. and Mrs. G. Havelka
Mr. Robert M. Heaney
Mr. Daniel C. Hellinger
Ms. Mary L. Hoevel
Ms. Nancy Homesley
Mr. and Mrs. Thomas L. Hoops
Mr. and Mrs. Dorsey W. Hurst
Mr. and Mrs. Clement Jansen
Mr. and Mrs. Larry Jost
Ms. Georgia Kahrhoff
Kathleen W. Kane
Mr. and Mrs. Ralph W. Kienker
Mr. and Mrs. Wilmer C. Koester
Mr. and Mrs. Lawrence Langsam
Miss Karen Larsen
Cecelia M. Lehmann
Mr. William Lyon
Martha Y. Mahaney
Mrs. E. B. McDonald
Mr. and Mrs. Richard McKeever
Mr. George Meuser
Ms. Jaclyn Meyer
Mr. Steven D. Mooneyham
Mr. and Mrs. Ronald Morse
Dr. and Mrs. John E. Mullins
Mrs. Mary J. Nietmann
Mrs. Marie C. Otis
Mr. Eli Perry
Mr. and Mrs. R. W. Peterson
Mr. and Mrs. Edmond Phillips
Mr. Robert Pierron
Mr. George Pitts
Mr. and Mrs. Harold Reardon
Anne A. Regenstreif
Mr. and Mrs. William Reid
Mr. and Mrs. Harry S. Rosenberg
Mr. Russell E. Rudolph
Mr. and Mrs. Paul E. Schoomer
Mr. and Mrs. A. C. Schuchardt
Mr. and Mrs. R. E. Schultz
Mr. and Mrs. Robert E. Schwartz
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Mr. Raymond J. Siebert
Mr. and Mrs. Roland Smith, Jr.
Dr. and Mrs. Richard S. Sohn
Dennis Spellman
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Mr. and Mrs. Maw Shiu Wang
Mr. and Mrs. Mark S. Weber
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Dr. and Mrs. Richard H. Wettach
Dr. and Mrs. W. E. Williamson
Mr. James M. Wire

Sustaining Members
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Mr. and Mrs. Carl J. Deutsch
Mr. and Mrs. Marcus B. Feldman
Mr. and Mrs. Rick Forrestal
Mr. and Mrs. Donald R. Franz
Mr. Michael G. Gratz
Mr. and Mrs. Donald P. James
Mr. Jeffrey L. Marsh
Mr. Steven Mintz
Mr. and Mrs. John H. Payne, Jr.
Dr. Robert W. Smith
Mr. William S. Schwab, Jr.
Mr. Steven Sherwood
Kathleen Smith
Mr. and Mrs. Robert P. Tschudy
Mr. and Mrs. Elmer J. Weber

Sponsoring Members
Mr. and Mrs. Harold A. Brinner
Dr. William S. Coxe
Mr. and Mrs. Richard W. Duesenberg
Ms. Margaret A. Kiefer
Mr. and Mrs. Wm. F. Klipsch, Jr.
Mr. and Mrs. Harold C. Mueller
Mr. and Mrs. Franklin H. Schapiro
Mr. and Mrs. James W. Singer, Jr.

Tributes

March–April 1983

IN HONOR OF:

Mr. and Mrs. Adam Aronson
Mrs. Ben H. Senturia
Mr. Frank Bauman
Lester and Judy Goldman
Mrs. Ruby Becker
Mr. and Mrs. John E. Vigil
Mrs. Gerald Eder
Claire and Dick Marx
Mr. Jack Jennings
Webster Groves Garden Club, Group 4
Mr. and Mrs. Wm. Rhoads
Mrs. A. Herzog
Mr. and Mrs. A. H. Lamack
Mrs. J. McNulty
Mrs. H. Rinesmith
Mr. and Mrs. L. S. Woodcock
Mrs. Joan Rosenblum
Mr. and Mrs. Lester Adelson
Mrs. Sydney M. Shoenberg, Jr.
Mr. and Mrs. Arnold Schwab
Florence Stern
Mr. and Mrs. John Sears
Four Seasons Garden Club
Don and Kristy Short
Mr. and Mrs. Herbert M. Talcoff

Lt. Col. Thomas R. Swisher
Mrs. T. R. Swisher

IN MEMORY OF

Opaline Anderson
Beta Kappa Chapter of
Delta Kappa Gamma
Mr. Newell A. Augur
Mrs. Kenneth H. Bitting
Mrs. John G. Burton
Mr. and Mrs. B. B. Culver, Jr.
Mrs. Leicester B. Faust
Mrs. John H. Hayward
Mrs. Henry Hitchcock
Mrs. A. Wessel Shapleigh
Mrs. Edward C. Simmons II
Mrs. C. P. Whitehead
Mrs. Dorothy N. Barthels
Chused, Strauss, Chorlins,
Bini & Kohn, Attorneys at Law
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Nine Days of Japan in St. Louis

For the eighth year, the Garden brings a bit of Japan to the heart of St. Louis with its nine-day Japanese Festival. Sponsored for the second consecutive year by The Seven-Up Company, the Festival runs this year from June 18 until June 26. What can you expect?

Miss Japan 1983 will open the Festival.

Folk Dancers
Japanese Storytelling
A Candy Sculptor
Martial Arts Performers
The Taiko Drummers
Music
Food

Last year, 50,000 came and were thrilled by the Festival. If you weren't one of them, join them this year. If you were, come again: It's a special time of the summer in St. Louis.









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Missouri Botanical Garden Bulletin

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Herbarium Accessions Three-Millionth Specimen



The Garden's herbarium officially accessioned its three-millionth specimen on April 20, 1983. The specimen was presented to two important groups of people who have contributed greatly to the success of the Garden's herbarium over the past several years: The Garden's Board of Trustees and the Botany Department's corps of volunteers. The three-millionth specimen was the type or standard specimen of a new species, *Philodendron davidsonii,* collected in Costa Rica. Selection of this specimen to be marked as number 3 million emphasizes the important research being done at the Garden on the Araceae (aroid family) by Dr. Thomas B. Croat, Paul A. Schulze Curator of Botany, and his associates. It also emphasizes the Garden's commitment to carry out botanical research and exploration in the tropics.

The Garden's herbarium has grown from about 60,000 specimens when Henry Shaw began the collection through the purchase of a private herbarium in Europe to its present size of approximately three-million specimens. The one-millionth specimen was added to the collection in about 1931, and the two-millionth in 1969. Since the mid-1960s, when the Garden's research program was revitalized, the collection has expanded in size and importance very rapidly. At the time of the accessioning of the two-millionth specimen, the Herbarium staff consisted of four curators and four support personnel. Today that same staff has grown to 22 Ph.D-level curators and a support staff of about 30. The Garden's commitment to maintaining its position as the world leader in the exploration of tropical areas is based on the realization that many of the plants in these areas will be extinct by early in the next century and if we are ever to know anything about them, it is up to our generation, through institutions such as the Garden, to find it out.

—Marshall Crosby, Director of Research

Plants and Man

Roberto Burle Marx, called one of the world's greatest living landscape designers, received the Albert P. and Blanche Y. Greensfelder Award from the Missouri Botanical Garden in May. In conjunction with the award ceremony, Mr. Burle Marx delivered the annual Greensfelder Lecture, entitled "Plants and Man," excerpts of which appear below. During his illustrious career that has spanned six decades, he has won several prestigious awards, both for his work in landscape design and for his painting. He landscaped Brasilia, Brazil, and also designed the largest public park in Venezuela as well as public and private gardens in South America and Europe. He is strongly committed to the preservation of the flora of his native Brazil and has financed several botanical expeditions; several genera and species of native Brazilian plants have been named for him in recognition of his conservation activities. The Greensfelder Award, established in 1980, recognizes those who have made substantial contributions to conservation and urban improvement. Previous recipients include Wayne C. Kennedy, August A. Busch, Jr. and Leonard Hall.



Roberto Burle Marx

From the time in history when certain tribes settled in specific geographic locations, man began to create spaces for the systematic cultivation of plants. These may have been clearings in the forest, where the crops planted had to be constantly protected from the rampant growth of other plants, which were of no benefit to him; they may have been spots in the desert in which plant growth had to be encouraged by artificial irrigation;

(continued on page 4)

Comment



One of the most interesting and exciting developments included in our Master Plan, announced in 1972, is a Home Gardening Center. For the last three years, we have had such a center—the Demonstration Vegetable Garden. This existing garden, however, is only a fraction of the scale called for in our Master Plan. This demonstration garden has given us the opportunity to display for our visitors both common and unusual vegetable varieties and to show them how to cultivate them; a small exhibit adjacent to the garden itself displays the types of grasses commonly used in lawns in our St. Louis area.

The experience with the Demonstration Vegetable Garde has been a good one for us. We have received many favorabl comments from visitors; we have also received suggestions fro them regarding the types of exhibits they think appropriate fo such an area, and during this three-year experiment we hav been able to display many new and unique vegetable garde plants.

Now we are preparing to begin development of the full-scal Home Gardening Center—a five-acre garden to be located jus north of the Japanese Garden. In addition to a vegetable garde area, and an exhibit of grasses, it will include a diversity

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Gardening in St. Louis

Gardening in the Shade

Many of the older city and county homes in the St. Louis area are surrounded by large, stately, deciduous and evergreen trees and shrubs. These plants create an inviting, cool, green environment, but adding plants to this shady area does present a challenge.

First let's discuss the word "shade." It is not an exact term. *Dense shade* is that found under evergreens; few plants can tolerate this low-light area. *Diffused shade* created by tall, deciduous oaks provides much more light and allows us additional growing possibilities. In *partial shade,* such as in a clearing where four to five hours per day of direct sunlight strikes plants, many annuals and perennials will thrive. The lists of plants at right will do well in a diffused to partially shady area.

Many hardy ferns, wildflowers and spring flowering bulbs are also recommended. When choosing spring flowering bulbs for a shade area, choose those species and hybrids which flower early in the spring so that they will have a chance to bloom and mature before dense foliage develops on the overhead deciduous trees. Crocus (*Crucus spp.* and hybrids), Snowdrops (*Galanthus nivalis*), Winter aconite (*Eranthis hyemalis*), *Anemone blanda,* Glory-of-the-Snow (*Chinodoxa spp.*), Squill (*Scilla sibirica*), and Grape Hyacinth (*Muscari botryoides*) are good ones to try.

Daffodils (*Narcissus spp.* and hybrids) grow best in a bright area where they are only shaded by large, open deciduous trees. They will not do well in an area which is in dense shade.

Growing Pointers for Listed Shade Plants

1. Now is the time to start seeds of biennials and perennials listed. Seedlings can be over-wintered in a cold frame or planted into the garden and protected with mulch.
2. Plant trees and shrubs, ground covers and vines in the early fall when the temperature has cooled down.
3. Spring blooming bulbs can be planted in October and November.
4. Annuals can be started indoors in February and March and transplanted into the outside garden in May.
5. Summer bulbs can be started indoors in containers in March and transplanted outdoors in May or started directly outdoors in the garden as soon as the threat of frost is gone in early to mid-May.
6. Ferns and wildflowers are usually planted in early spring.

—Steven A. Frowine, Public Horticulture Specialist

Annuals
- Blue Torenia (*Torenia fourieri*)
- Browallia (*Browallia speciosa*)
- Coleus (*Coleus hybridus*)
- Flowering Tobacco (*Nicotiana alata*)
- Forget-Me-Not (*Myosotis sylvatica*)
- Impatiens (*Impatiens sultani* and hybrids)
- Madagascar Periwinkle (*Catharanthus roseus*)
- Monkey Flower (*Mimulus tigrinus*)
- Spider Flower (*Cleome spinosa*)
- Sweet Alyssum (*Lobularia maritima*)
- Wax Begonia (*Begonia semperflorens*)
- Woodruff (*Asperula orientalis*)

Biennials
- Cup-and-Saucer (*Campanula medium* var. *calycantha*)
- English Daisy (*Bellis perennis*)
- Foxglove (*Digitalis purpurea*)

Perennials
- Beebalm (*Monarda didyma*)
- Bleeding Heart (*Dicentra spp.* and hybrids)
- Christmas Rose (*Helleborus niger*)
- Columbine (*Aquilegia spp.* and hybrids)
- Crested Iris (*Iris cristata*)
- Early Blue Violet (*Viola palmata*)
- Garden Phlox (*Phlox paniculata*)
- Heart Leaf Brunnera (*Brunnera macrophylla*)
- Hosta (*Hosta spp.* and hybrids)
- Japanese Iris (*Iris japonica*)
- Japanese Primrose (*Primula japonica*)
- Johnny Jump-Up Violet (*Viola tricolor*)
- Lenten Rose (*Helleborus orientalis*)
- Peony (*Paeonia spp.* and hybrids)
- Polyanthus Primrose (*Primula polyanthus*)
- Sweet Violet (*Viola odorata*)
- Woodland Phlox (*Phlox divaricata*)

Summer Bulbs
- Caladiums (*Caladium x hortulanum*)
- Tuberous Begonia (*Begonia tuberhybrida*)
- Elephant's Ear (*Colocasia antiquorum*)

Vines
- Silverlace Vine (*Polygonum aubertii*)
- Virgin's Bower (*Clematis spp.* and hybrids)
- Virginia Creeper (*Parthenocissus quinquefolia*)

Trees
- Allegheny Serviceberry (*Amelanchier laevis*)
- American Beech (*Fagus grandiflora*)
- Black Cherry (*Prunus serotina*)
- Common Sassafras (*Sassafrass albidum*)
- European Beech (*Fagus sylvatica*)
- European Hornbeam (*Carpinus betulus*)
- Flowering Dogwood (*Cornus florida*)
- Kousa Dogwood (*Cornus kousa*)
- River Birch (*Betula nigra*)
- Sourwood (*Oxydendrum arboreum*)
- Sugar Maple (*Acer saccharum*)

Shrubs
- Bloodtwig Dogwood (*Cornus sanguinea*)
- Common Witchhazel (*Hamamelis virginiana*)
- Common Spicebush (*Lindera benzoin*)
- European Privet (*Ligustrum vulgare*)
- Flowering Quince (*Chaenomeles speciosa*)
- Fragrant Sumac (*Rhus aromatica*)
- Japanese Barberry (*Berberis thunbergi*)
- Oakleaf Hydrangea (*Hydrangea quercifolia*)
- Various Azaleas and Rhododendrons (*Rhododendron spp.* and hybrids)
- Various Viburnums (*Viburnum spp.* and hybrids)
- Yews (*Taxus baccata, T. cuspidata*)

Ground Covers
- Ajuga (*Ajuga reptans*)
- Bethlehem Sage (*Pulmonaria saccharata*)
- Bunchberry (*Cornus canadensis*)
- Cowslip Lungwort (*Pulmonaria augustifolia*)
- Dwarf Lily Turf (*Ophiopogon japonicus*)
- English Ivy (*Hedera helix*)
- European Ginger (*Asarum europaeum*)
- Lily-of-the-Valley (*Convallaria majalis*)
- Long Spur Epidendrum (*Epidendrum grandiflorum*)
- Pachysandra (*Pachysandra terminalis*)
- Persian Epidendrum (*Epidendrum pinnatum*)
- Sweet Woodruff (*Asperula odorata*)
- Vinca (*Vinca minor*)
- Wild Strawberry (*Fragaria virginiana*)

Shovel, Hoe, Radio

As every month, Missouri Botanical Garden staff members and volunteers will be featured on the radio discussing gardening problems and answering questions pertaining to plant care, landscaping, and related topics.

During August and September, the Garden's Public Horticulture Specialist, Steve A. Frowine (who writes "Gardening in St. Louis") will appear twice a month on KMOX-AM (1120 on the dial) as follows: **Wednesday, August 3** (3-4 p.m.)–Major Topic: *Harvesting Vegetables*; **Saturday, August 20** (3-4 p.m.)–Major Topic: *Controlling Insects and Diseases*; **Friday, September 17** (3-4 p.m.)–Major Topic: *Fall Lawn Care.*

During September, two Answer Service volunteers and Master Gardeners and the Garden's Rosarian, David Vismara will appear on KFUO-AM (850 on the dial) in "How Does Your Garden Grow." The program airs at 9:20 a.m. until 10:00 a.m. **Thursday, September 1:** Elmer Wiltsch, Answer Service/Master Gardener; **Thursday, September 8:** Carol Taxman, Answer Service/Master Gardener; **Thursday, September 15:** David Vismara, Missouri Botanical Garden Rosarian.

Your radio is now one of your most important gardening tools.

Comment *(continued from page 2)*

home landscape styles and garden areas appropriate for small yards. The intention of the area is to provide a number of ideas for our visitors which they can incorporate into their own gardens and yards; it will become the center for new educational programs about all aspects of gardening.

At the present time, we are soliciting ideas, comments, and suggestions from our Members and others; we are asking: what kinds of vegetables would you like to see in the center; what kind of trees and shrubs; are you interested in how to grow plants in containers; do you want demonstrations of the best methods of growing a lawn; what are the most difficult areas for you to landscape?

This garden will be for everyone who enjoys any aspect of gardening; we sincerely want it to give to our visitors the kinds of displays and information they consider most important and pertinent. Therefore, I am asking you to send any comments you may have to us at:

Home Garden Center
Missouri Botanical Garden
P.O. Box 299
St. Louis, Missouri 63166

I want to acknowledge the generosity of Dr. Walter L. and Dorothy Mahaffey Moore who have made the detailed planning for the Center possible. We will keep you informed of all developments of the Home Demonstration Center through regular articles in the *Bulletin.*

Peter H. Raven

New Places to Visit



Just north of the Flora Gate is a new Hosta Garden, given in memory of Marie Schaeffer Shields by her children. Although it is now in its earliest stages of development, it still offers visitors the opportunity to see hostas and other companionable plants that are suitable for shady garden areas, including bleeding hearts, ferns, and true lilies. Later, early spring bulbs will be in evidence. According to Alan Godlewski, Chairman of Horticulture, by summer of 1984 the Hosta Garden will offer an extremely lush display. . . . . .



A dry stream bed garden is now located on the knolls, given in memory of Ben Weisman by Patsy Hilda Weintraub. Along the stream bed portion of the garden are featured exotic grasses, several species of iris including the native water iris, and variegated red-stemmed dogwood. Around the pool at the garden's north end are a variety of cattails, three varieties of water lily, and dwarf lotus. . . . . .

Plants and Man

(continued from page 1)

or a place like Holland where land used for cultivation was actually wrested from the sea and constantly defended against it by the erection and maintenance of dikes and drainage ditches. The original purpose of these cultivated landscapes was undoubtedly economic. Man raised plants for their food or medicinal value —but very soon he must have attributed to certain plants aesthetic and even magical qualities, and he began to cultivate some of them for their colors, form and scent.

Eventually, man began to set aside spaces which were devoted exclusively to the cultivation of plants for sheer visual pleasure. Perhaps at first he grew a bit of everything he liked, but by and by he began to select certain colors and establish certain rhythms and patterns. He turned these pleasure grounds from mere plant collections into visually meaningful and harmonious compositions. The stylistic development of these early gardens was to a great extent determined by the geographic and climatic conditions in which they developed. The Near Eastern peoples, whose life and agriculture depended on careful irrigation and the preservation of natural springs, held water sacred. Islamic culture spread this reverence for water from Persia all the way to the Moghul gardens in India and the Moorish gardens in Spain, where each court is centered on a pool or finely wrought fountain, in which water always flows, even during the dry season.

However, garden styles are not always strictly determined by geographic and economic conditions—certainly the Zen Buddhist garden did not grow out of any agricultural practice. Its purpose was religious; it served to induce introspection and contemplation of nature and universe. On the other hand the great baroque gardens of Italy, although built mostly by Cardinals, had no religious significance at all.

To a vigorous, extroverted and exhibitionist period, the building of gardens offered an opportunity to prove men's dominance over nature, to demonstrate his inventive spirit, and to shape the topography and even the vegetation according to his artistic precepts.

The fashion for huge tropical leaves and for rich tropical colors: oranges, scarlets and very hot pinks, vivid purples and very sharp yellows—colors which hardly exist among the temperate flora—arose from the travels of men like Gardener, St. Hilaire, Bonplan and Martius in South America, and from their great enthusiasm for what they saw. They sent back descriptions, in some cases drawings, in others seeds and actual plants, and these came in time to form Winter Gardens, houses in immense conservatories in all the capitals of Europe. It was in one of these conservatories that I myself, at the age of twenty, first became aware of the special quality, the drama, and at the same time the complexity of the Brazilian flora.

I pointed out at the beginning of this lecture how the physical conditions of a country may determine man's attitude towards nature—and eventually their development of gardens. In my native Brazil man was very much in the position of those early tribes who had to make a clearing in the jungle, and then defend their crops from the overwhelming growth of natural vegetation. To the European settler who colonized Brazil, the vegetation was especially threatening and fearsome because it differed so much from the familiar forests of his homeland—so, nature came to be regarded as the enemy which had to be destroyed and replaced by more familiar forms—and, I am sad to say that, in general, this attitude still prevails.

In Brazil as elsewhere in the Americas, garden styles have followed more or less European patterns. In the 18th century we had the formal avenues derived from the French Garden. Later, a French engineer, Francois Marie Glaziou, introduced the English landscape style, but in a somewhat 19th century version. But he also brought a new freedom to the Brazilian garden. His trees were not planted in straight rows—they were grouped informally on large expanses of lawn. He also began using tropical plants such as pandanus, alocasia, and several imported palms. By the twentieth century a gardenesque European style had made its appearance. In the gardens of my childhood the beds were planted with carnations, lavender and standard roses. I do not wish to deny the validity of this style—used in its proper place. But when I saw this public park, soon after the discovery of our native *Philodendron speciosum* in a hothouse at the Dahlem Botanical Garden of Berlin, I realized that such a plant would be altogether out of place in that kind of layout. I began to think of creating a garden which would provide the proper setting for our native flora, and whose design would in fact be inspired by it.

In 1934 I was appointed Director of Parks for the city of Pernambuco, in the north-east of Brazil. This position made it possible for me to experiment with my new ideas. I introduced native plants into public parks, which had never been used in a landscape setting. It gave the gardens a completely new look—they began to be Brazilian. Gradually a new expression in garden design evolved, befitting this kind of plant.

In the 19th century, Gertrude Jekyll had reintroduced color to English gardens, from which flowers had been eliminated during the development of the landscape park. Her herbaceous borders were built up with a careful blend of colors—like impressionist paintings. She had at her disposal an immense wealth of flowering perrenials from North America, Southern Europe, Asia Minor and the Far East—plants from temperate zones, which I could not use. But I had [other] plant materials available: I expanded her borders and laid them out against the green lawn in large interlocking forms derived from the abstract paintings of our period. I also used groups of rocks in a sculptural sense or as places where I could plant bromeliads, anthurium, philodendron, and orchids—just as I saw them growing on the rocky mountain sides around Rio.

It is important to know that one cannot simply make a design on paper and later add plants to it. The plants must be in our thoughts from the beginning, and the design must be developed partly as a function of the species to be used. Just as a poet needs to know his language, so must the designers of parks and gardens have a knowledge of plants, including the eventual size, habit, texture, and color—their time of flowering and their precise effect on the landscape. Garden design, as any other art form, must be based on sound artistic principles, a firm knowledge of composition, and a discerning taste. There are times when influences on my design are not derived from the plant world or from natural topography. I may receive a visual impression, when visiting a new city, of a certain arrangement of masses, colors and lights. This impression may first find its way into one of my abstract paintings and later influence the design of a garden plan.

I would like to end this address by stressing that we live in a time in which an ever-increasing number of people live in metroplitan areas. As garden designers we must focus our attention on the city, where human beings are cut off from nature and have the greatest need to interact with plants. Tree-lined boulevards and a sufficient number of green spaces can restore the balance in our cities, which are getting vaster, harder, and more inhuman every day. The city dweller needs plants, and not just for the freshness and the oxygen they can provide. He needs them psychologically as well, perhaps because throughout its development the human race has been dependent on plant life for its survival. I have no objections to skyscrapers, if the space gained by building upward can be transformed into parks.

One of the most restful things in life is to look at a tree-covered island, surrounded by the blue of the sea. We cannot reproduce the exact proportions of nature in a city, but in our parks we can transpose and symbolize some of the features of nature which give us such satisfaction. In the middle of the city, we can create ponds with green islands, and shelter them from the surrounding harshness, bustle and noise with belts of vegetation, as Olmstead did in Central Park. It is essential for the tranquility and mental health of urban dwellers that such green oases be dispersed throughout the city. These ideas are not new, and they are hard to refute. But unfortunately they often tend to remain on paper. In practice they are swept aside by the cold realities of the real estate market, and by the short-sighted expedience of immediate financial gains. In the vicious circle of more intensive land use and the subsequent need for higher taxation, the municipalities are as responsible as the private speculator.

It is our mandate as landscape architects to make the public aware of their need for plants, and to see that governments and town planners set aside different areas for green spaces. As much as possible, the spaces should be linked in their design with the surrounding landscape and include the local vegetation. Our responsibility extends not only to our fellow man, but to the plant world as well. In this age of hectic expansion, of a terrifying increase in world population—in an age when millions of acres of farmland and forests are lost every year to shortsighted exploitation and development, we must stand as the guardians of a natural patrimony, upon which ultimately rests the survival of the human race! —*Roberto Burle Marx*



With Garden Director, Peter H. Raven, is Gloria Sawyer, Director of Public Affairs of KSD and KSD-FM, Gannett Co. radio stations. Ms. Sawyer presented a check from the Gannett Foundation to the Garden for the support of the construction of the Ridgway Center.

Education and Service

Now entering its second year, the Master Gardener program offers experienced amateur horticulturists a unique and challenging opportunity to learn and to serve their community at the same time. Participants attend a series of comprehensive lectures and workshops, which lead to the certificate of Master Gardener. In lieu of tuition—there are only nominal charges for materials and literature—certified Master Gardeners agree to volunteer a specified number of hours in service to the St. Louis area.

The first 13 Master Gardeners, who completed the program in February, 1983, are currently assisting the Missouri Extension Service (who co-sponsors the program with the Missouri Botanical Garden) on a daily basis by responding to gardening questions and problems from telephone requests; making regular presentations to community groups, including the Elder-hostel and Arts for Older Adults programs; staffing the Missouri Botanical Garden's Walk-in Plant Clinic; working with city schools in school gardening projects; and volunteering in the Missouri Botanical Garden's 20-year-old Answer Service program.

There are 30 openings for interested gardeners in the second session of classes which begin October 4. Applications (the deadline for filing them is August 29) may be obtained by calling the Garden's Education Department at 577-5140.

A Garden Party With Bobby Short

Oh, what a party! The decorations, the music, the food, everything was just perfect. Perfect because of the *many, many* hours of planning and hard work donated by a wonderful committee. Special recognition is due for the unrelenting and unlimited time and effort put forth by the Gala chairmen, Mrs. Robert R. Hermann, Mrs. Warren M. Shapleigh and Mrs. Walter G. Stern. Their enthusiasm and diligence were transmitted throughout the committee.

The final outcome certainly showcased all the hard work of the many people who made the evening a success. For example, Mrs. Hord Armstrong coordinated all the arrangements for the fabulous gourmet dinner prepared by Erker Catering. Mrs. Bernard Brinker and Mrs. Robert H. Kittner were responsible for the fantastic attendance as they managed the ticket sales and reservations. Mrs. Pedrick Conway had the pleasure of escorting our guest of honor, Mr. Bobby Short, during his visit while Mrs. Charles Cook entertained "Mr. Omelet," Rudolph Stanish. The last-minute touches on the dinner tables in the Floral Display Hall and throughout the building were coordinated by Mrs. Bourne Bean, who received a great deal of help from her committee and superb ideas from Stix, Baer & Fuller.

The Garden's rewards from "A Garden Party with Bobby Short" are certainly many. Financially the party raised nearly $25,000 but it is impossible to measure the amount of interest and enthusiasm it generated for the Ridgway Center and the Missouri Botanical Garden.

The Garden wishes to acknowledge all members of the Gala Committee: Chairmen—Mrs. Robert R. Hermann, Mrs. Warren M. Shapleigh, Mrs. Walter G. Stern. Committee—Mrs. J. Hord Armstrong, III, Mrs. N. Arne Arneson, Mrs. Edwin S. Baldwin, Mrs. Walter F. Ballinger, Mrs. William Maffitt Bates, Jr., Mrs. Bourne Bean, Mrs. Bernard Brinker, Mrs. John Brodhead, Mrs. William H. T. Bush, Mrs. Sumner S. Charles, Mrs. Pedrick Conway, Mrs. Charles Cook, Mrs. James E. Crawford, Jr., Mrs. Henry W. Dubinsky, Mrs. Richard T. Grote, Mrs. August W. Hager, III, Mrs. Richard Holton, Mrs. Darrell Ingram, Mrs. Landon Y. Jones, Mrs. W. Boardman Jones, Mrs. O. Alexander Kerkhoff, Mrs. E. Lawrence Keyes, Jr., Mrs. Robert H. Kittner, Mrs. Willard L. Levy, Mrs. Joseph Lewis, Mrs. John Mackey, Mrs. Sanford McDonnell, Mrs. Shadrach F. Morris, Mrs. Jackson C. Parriott, Mrs. Michael Pulitzer, Mrs. Rudyard K. Rapp, Mrs. William A. Sims, Jr., Mrs. Donald Schnuck, Mrs. Edward J. Schnuck, Mrs. Charles G. Schott, Jr., Mrs. Edward Stivers, Mrs. William P. Stiritz, Mrs. Joseph Werner, Mrs. Orrin S. Wightman, III, Mrs. Eugene F. Williams, Mrs. Donald D. Wren, Mrs. Bruce R. Yoder, Mrs. Andrew Zinsmeyer.

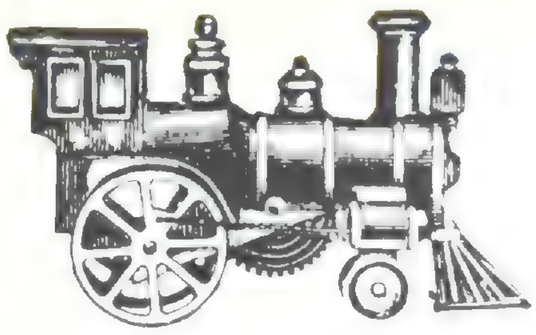
Thank you for your generous support.

—Patricia Arnold
Membership Coordinator

Recently the Garden's library received several contributions in memory of Sidney Trelease who died in the spring of 1983. He was one of six children of William Trelease, the Garden's first Director after Henry Shaw. William Trelease served in that office and resided in Tower Grove House from Shaw's death until 1913. Aside from Sidney, his children were two daughters who died in infancy and three sons, Frank (1887-1959), Sam (1892-1958), and William Trelease, Jr. who presently lives in California. The donations were used to acquire several attractive books, including *The Stapeliae*, a recent limited reproduction of a rare volume written in 1806 by Baron Nicolaus Joseph L.B.A. Jacquin; *Gardens of a Golden Afternoon*, a book describing the more than 100 gardens designed by Sir Edwin Lutyens and Gertrude Jekyll during the Victorian and Edwardian eras; an autographed *Transvaal Wild Flowers*, which contains text and paintings of the Flora of South Africa; and *The Origins of Garden Plants*. Members interested in seeing these volumes are reminded that the Garden's library is open on weekdays from 9 a.m. until 5 p.m. . . . . .

The Garden was saddened to learn of the death of one of its long-time friends, Mrs. Beatrice T. Hoskins, on June 4. A native of Madison, New Jersey, she attended St. Louis's Mary Institute and was a graduate of Vassar College. She was twice-widowed, having been married to Archie Laney Lee from 1925 until his death in 1950, and later to Arthur Corbett Hoskins until his death in 1962; both men were prominent advertising executives in St. Louis.

The staff of the Garden expresses deepest sympathy to Mrs. Hoskins' family. . . . . .



Want to go somewhere? The Missouri Botanical Garden has four trips scheduled for its Members during the fall of 1983 and the winter and spring of 1984.

• *Japan* (November 4-20) Led by Chairman of Horticulture Alan Godlewski, the tour will visit Tokyo, Mount Fuji, Okayama, Kyoto, and Osaka. An optional extension of the tour will visit Taipei and Hong Kong. For further information consult the brochure mailed to you or call Travelers' Choice at 961-5080. . . . . .

• *Far East Tour* (January 19-February 6) Led by veteran traveler and Public Horticulture Specialist Steve Frowine, the tour will go to Hong Kong, Bangkok, Singapore, Jakarta, and Manila. Watch for the tour brochure or call Sante Travel at 726-3040 for information. . . . . .

• *Williamsburg-Alexandria* (March, 1984) It will be led by Jane Coultas, Manager of the Garden's historic Tower Grove House. Watch for details to be mailed soon. . . . . .

• *Italy* (May, 1984) Again, watch for details to come; it will be led by Alan Godlewski. . . . . .

The Missouri Concert Ballet Guild is sponsoring a benefit performance and cocktail party on Friday, September 30, at Missouri Botanical Garden. Proceeds will be donated to the ballet company, which is working toward expanding its 1984 schedule.

The benefit will be held at the Garden's new Ridgway Center, beginning at 8 p.m. Tickets may be purchased for $17.50 each by calling Betty Schafer at 878-5218 or Mary Ann Abrams at 878-5028. A portion of the ticket price is tax deductible.

Co-chairpersons of the Guild benefit are Sonja DiPaolo and Bonnie Ferrell. Honorary co-chairpersons for the event are Dr. Peter H. Raven, Garden Director, Tamra Engelhorn Raven, and Catherine Comet, Exxon Arts Endowment Conductor of the St. Louis Symphony Orchestra. . . . . .

The Garden's total membership reached 16,000 in late spring, an increase of nearly 700 since January 1. No other botanical garden in the world has a membership as large. . . . . .



Lantern in place at the 1904 World's Fair.

In A Historical Light

Visitors interested in history have always had much to see in the Garden, most notably the century-plus old buildings left behind by the Garden's founder, Henry Shaw (Tower Grove House, the Linnean House, and the Museum, to name three).

But in an area of the Garden that is not even a decade old are two artifacts with considerable historical significance.

In the Japanese Garden (opened in 1977) are two stone, snow-viewing lanterns (*yukimi-doro*) that were part of the Japanese Garden at the 1904 World's Fair held in St. Louis. The lanterns, believed to be several centuries old, were purchased from the Japanese government by Leonard Matthews following the close of the Fair on December 1, 1904. Matthews—a Garden trustee from 1895 until 1923—used the lanterns in his private garden until he donated them to the Garden in 1930 just prior to his death at age 102. He was co-founder of the first wholesale pharmaceutical company in St. Louis and, later, a co-founder of St. Louis' first brokerage firm.

For many years, the lanterns were used as decorative props during flower shows—primarily for the annual chrysanthemum exhibits. Later, one of the lanterns was displayed—as it still is—near the entrance to the Japanese Garden, while the other was located outside the Floral Display House. This second lantern has recently been placed in the Japanese Garden by that garden's designer, Koichi Kawana, and can be found in the newly-developed area west of the Taikobashi-Drum Bridge.

Matthew's granddaughter, Mary Weise, has been active as a Garden guide for a number of years.



The Funsten Lantern (left), given in memory of Gladys McNair Funsten by Robert Lee Funsten, Elizabeth Oliver McCarthy, and Edward S. Funsten, placed recently near the Plum Viewing Arbor in the Japanese Garden. . . . . .

The Garden's Public Horticulture Specialist, Steve A. Frowine, was honored recently by the Land Reutilization Authority as a "Friend of the Agency." The Authority, a City of St. Louis agency, recognized Mr. Frowine's efforts in their Adopt-A-Lot program, which concentrates on beautifying and developing the more than 6,000 vacant city lots managed by the Authority. . . . . .

A Desert Dish Garden

When young children visit the Garden, they are especially impressed with the plants inside the Climatron and the Desert House. The plants in these greenhouses do not normally grow outdoors in St. Louis. As a result, they are new discoveries for children, different and exciting. Your child can make a small desert dish garden containing plants that are easy to care for and that have unusual and interesting growth patterns.

You will need: a shallow pan or saucer, approximately 9″ x 13,″ or 9″ round; horticultural charcoal; gravel; sand; rocks; soil; a variety of cacti and succulents; scissors or plant shears; old newspaper.

What to do: Show your child the cacti and succulents. The cacti are usually covered with spines for protection, so caution will be needed in touching. What would happen if an animal came too close to the spines?

Cut off a section of one of the plants so your child can see and feel the moisture inside. Cacti and succulents store water in their fleshy leaves and stems, which often given them odd but interesting shapes.

Mix together the charcoal and gravel, and spread it on the bottom of the shallow pan or saucer. Add another 1½ inches of soil. Carefully plant the cacti and succulents, using a piece of old newspaper to hold the cactus plants. Firm the soil around each plant. Sprinkle a thin layer of sand over the soil, and place a few rocks randomly for decoration. Water thoroughly, and then water only every two weeks. Place the desert garden in a sunny location. Observe and talk about the changes in plant growth, shape, or other characteristics over a period of weeks and months.

—Ilene Follman
Education Specialist

FOR Younger MEMBERS

Hidden Treasure... at Shaw's Garden!

"Look, the Climb-upon!" exclaimed an eager young Garden visitor upon seeing the *Climatron*. And, indeed, the Climatron's tubular aluminum superstructure and its dome shape could easily represent a young climber's dream. This observation is one of hundreds made each day by young children who visit the Garden. They often view living and non-living objects in a manner quite different from their adult companions.

The Garden's Education staff, intent on capturing the whimsical interpretations and moods of children, has designed a new Discovery Map of the Missouri Botanical Garden. In the manner of an old-fashioned treasure map, the Discovery Map contains objects to look for, riddles to solve, and special activities to complete. One side of the map has been designed by children, whose drawings and written interpretations of a Garden visit are as fresh and creative as any the Education Department has seen or heard. The map has been heartily welcomed by young Garden visitors, and their adult companions seem to be equally delighted with it.

How many Garden treasures do *you* know about? How many more can you discover? Find out by using the new Discovery Map as your guide. The map is available at the Ticket Counter for 25¢.



Discoveries *You* Can Make...

When New City School's students visited the garden, they saw many interesting things. Some of their drawings are on this page. How many of them have you seen in the Garden? Which ones are plants? Which ones are animals? Which ones are structures? Next time you come to the Garden see if you can discover something you have not seen before.

CALENDAR

August



The Climatron — a world famous landmark — is one of the finest examples of the geodesic dome form created by the late R. Buckminster Fuller. In September it features bromeliads.

AUGUST 1-6

August 6: **Boehm Porcelain Flower Exhibit**, Floral Display Hall, through August 19. The largest exhibit of porcelain flower sculpture ever open to the public.

AUGUST 7-13

August 13: **Winnie the Pooh**, Shoenberg Auditorium, noon. Another in the series of Disney animated classic films.

Continues: **Boehm Porcelain Flower Exhibit**

AUGUST 14-20

Continues: **Boehm Porcelain Flower Exhibit** (Last Day, August 19)

AUGUST 21-27

August 25-27: **Midsummer Night Movies:** Two delightful Hepburn and Grant classics for the price of one: *Bringing Up Baby* and *Holiday*. Shoenberg Auditorium, 8:00 p.m.

AUGUST 28-31

August 28-31: **Henry Shaw Cactus Society Show**, Floral Display Hall. One of the most popular exhibits of the year at the Garden.

September

SEPTEMBER 1-10

September 1: **Calder in Retrospect**, Ridgway Center, through October 2. The first major St. Louis exhibit of the work of one of our century's greatest artists.

Bromeliad Exhibit, Climatron, through September 30. The story goes that thirsty explorers in Florida were able to survive by drinking the water that these plants retained.

Roses, Garden grounds, through September 30. An informative and beautiful exhibit of America's favorite flower.

September 2-4: **Much Ado About Nothing**, Theatre Project Company, Cohen Amphitheater. A comedy by the greatest playwright of the last half-millenia performed in the world's greatest garden. (Also on 9/8-11.)

September 5: **Labor Day/Family Picnic Day,** Garden grounds. Take the day off from laboring and enjoy the Garden.

Continues: **Henry Shaw Cactus Society Show** (Last Day, September 4).

SEPTEMBER 11-17

September 17: **The Living Desert**, a film. Shoenberg Auditorium, noon. A fascinating film about the drier places.

September 17-18: **Rose Weekend,** Lehmann Rose Garden. Wine, music, candlelight tours — need we say more for you romantics?

Continues: **Calder in Retrospect**
Roses Exhibit
Bromeliads Exhibit

SEPTEMBER 18-24

September 22-25: **Plant Sale**, Garden Gate Shop. Members save 20% on the finest plants in St. Louis (watch your mail for details).

September 24-25: **Dahlia Society Show**, Floral Display Hall.

Continues: **Calder in Retrospect**
Roses Exhibit
Bromeliads Exhibit

SEPTEMBER 26-30

Continues: **Calder in Retrospect**
Roses Exhibit
Bromeliads Exhibit

Classes

CLASSES? SURE WE HAVE CLASSES. The fall schedule of classes and workshops begins in September. Members will receive a brochure with details shortly. If you don't receive one, or would like additional copies for distribution to friends or fellow garden-club members, contact the Education Department at 577-5140. The courses are listed below according to the date of the FIRST meeting (in the case of multiple-session courses); numbers in parentheses following the course title note the number of meetings of the class. All courses meet in the Ridgway Center unless they occur at the Arboretum; those at the Arboretum are marked (A).

September 2 — **Evening Prairie Walk** (A) 6-8:30 p.m.

September 10 — **Dyeing with Natural Materials** (2) (A) 9:30 a.m.-3:30 p.m.
Animals of the Meramec River Valley (A) 10 a.m.-3 p.m.

September 11 — **Haiku, the Garden, and You** (2)

September 12 — **Successful Lawn and Ground Covers** (4) 7-9 p.m.
Introduction to Ikebana (3)

September 13 — **Preserving the Fall Harvest** (2) 10 a.m.-noon

September 14 — **Mediterranean Cooking** (3) 6:30-8:30 p.m.

September 17 — **Geology of the Meramec River Valley** 10 a.m.-3 p.m.

September 20 — **Home Landscape Design** (5) 7-9 p.m.
Autumn Ramble (A) 9:30 a.m.-1:30 p.m.

September 24 — **Art of Chinese Brush Painting** (6) 9:30-noon
Birding at Horseshoe Lake 8 a.m.-2 p.m.
Forests of the Meramec River Valley (A) 10 a.m.-3 p.m.
Equinox Celebration (A) 7:30-10:30 p.m.

September 27 — **Autumn Ramble** (A) 9:30 a.m.-1:30 p.m.

Biggs, McDonnell Elected as Trustees



John H. Biggs



James S. McDonnell III

At its June meeting, the Garden's Board of Trustees elected John H. Biggs and James S. McDonnell III as trustees.

Mr. Biggs is Vice Chancellor for Administration and Finance at Washington University. He is also Chairman of the Board of Washington University Technology Associates. Prior to joining the University he was Vice President and Controller of General American Life Insurance Company. He holds an A.B. degree from Harvard College and will complete a Ph.D. in Economics from Washington University this year.

Mr. Biggs is Vice President and Treasurer of St. Louis Arts and Education Fund, and a director of Centerre Trust Co. and of Mark Twain Institute. He has also been Chairman of the Finance Committee of the Missouri Coordinating Board for Higher Education.

His mother, Lillian Biggs, has been associated with the Garden as an answer service volunteer since 1979.

Mr. McDonnell is Corporate Vice President-Marketing and a Director of McDonnell Douglas Corporation. He joined the Corporation in 1963 as an aerodynamics engineer and holds a M.S. in Aeronautical Engineering from the Massachusetts Institute of Technology (MIT).

He is a member of the Board of Centerre Trust Co., Washington University Medical Center, Mary Institute, St. Louis Children's Hospital, and The St. Louis Art Museum. He is also a member of the Executive Committee of United Way of Greater St. Louis, and served as Chairman of the highly successful 1983 Arts and Education Fund Drive.

Profiles in Service



William R. Orthwein, Jr

When one talks of the Missouri Botanical Garden one usually comments on the gardens, the flowers, the fine examples of Victorian architecture; common adjectives or phrases may be "beautiful," "tranquil" or "stunning." But when William R. Orthwein, Jr., talks of the Garden he makes reference to "careful management," "responsiblity" and "public trust." Oh, do not make the mistake of thinking that he cannot appreciate the Garden's aesthetic qualities, because he also uses the phrase, "a place of joy and beauty" in describing the Garden.

For the last eight years—since 1975—he has served as a member of the Garden's Board of Trustees; since 1980 he has been First Vice President. When he talks about his role as a trustee, and that of the Board in general, he stresses that he is a *trustee*, not a director. "We have a responsibility to see that the purposes laid out in Henry Shaw's will are carried out, but we also are responsible to the community. The Board has been entrusted with the task of seeing that the Garden performs in a sound manner and that its resources are properly used," he says. "Everyone associated with the Garden faces a great challenge to make this botanical garden the world's finest."

Mr. Orthwein is one of those rare and extremely valuable individuals who bring extensive business ability and experience and applies it, largely unpublicized, to work in the community to improve the quality of life for the area's entire population. He was hesitant that this profile even be written. "All of the Trustees would agree with me that we do not do this work for the publicity; we don't seek the notoriety," he says. "But the members and the people of the community should know to what sort of men and women they have entrusted the Garden. It's one of the most important institutions in the community."

Mr. Orthwein is the retired President and Chairman of McDonnell Douglas Automation Company, and is a Director of McDonnell Douglas Corporation; he joined the corporation in 1942. In addition to the Missouri Botanical Garden, he has been involved with a number of other community and cultural organizations and is currently a member of the Board of Directors of the St. Louis Symphony Society, St. Louis Council of the Boy Scouts of America, and The St. Louis Development Corporation. He has

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Our New Commissioners



Seated, left to right: Mrs. James S. McDonnell, Mrs. David C. Farrell, Ms. Sandra Bennett, C. C. Johnson Spink (President of Garden's Board of Trustees), Ms Doris Moore-Glenn, Mr. Robert M. Sunnen, and Ms. Cody Kieffer Standing, left to right: Mr. Earl Wipfler (Administrative Secretary to the Zoo-Museum Board), Mr. Bourne Bean (Counsel to the Zoo-Museum Board), and behind him, Mr. Frederick S. Wood, Mr. Hal Kroeger (President of the Zoo-Museum Board), Mr. George H. Walker III, Dr. Peter H. Raven (Director of the Garden), Ms. Marjorie M. Weir, Mr. Richard Daley (Director of Public Programs for the Garden), Ms. Deborah Edwards, and Mr. Frank P. Wolff (Counsel for the Garden).

On April 5, 1983, voters in the City and County of St. Louis approved a measure creating a Botanical Garden Subdistrict of the eleven-year-old Zoo-Museum District. Through the Subdistrict the Missouri Botanical Garden will benefit from a property tax of up to 4¢ per $100 assessed valuation, providing the Garden with a stable financial base for operation. In the next several issues, we will offer our readers an opportunity to meet the ten commissioners who will govern the Subdistrict. Five of the commissioners were appointed by the Mayor of the City of St. Louis, Vincent C. Schoemehl; five were appointed by St. Louis County Executive, Gene McNary.

Marjorie M. Weir, Chairman of the Commission (Appointed by Mayor Schoemehl)

Marjorie M. Weir is no stranger to the Missouri Botanical Garden nor to the service of the St. Louis community. From October, 1980, until October, 1981, she served as an *ex officio* member of the Garden's Board of Trustees, by virture of her position as President of the St. Louis Board of Education; she was a member of the Board of Education for six years, from 1977 until 1983. Her interest in education—one of the Missouri Botanical Garden's primary activities—is apparent from her membership also on the Board of the Conference on Education and the Board of the Scholarship Foundation. She was also a teacher, for 5½ years, at Brittany Junior High School in University City, as well as an instructor in the University City Continuing Education program.



Marjorie M. Weir

Frederick S. Wood, Vice Chairman (Appointed by County Executive McNary)

Frederick S. Wood and his family first came into contact with the Missouri Botanical Garden in 1977, even before they moved to the St. Louis community. Passing through the city on their way to a vacation to Colorado, they stopped to visit the country's oldest botanical garden. Mr. Wood was impressed with what he saw.

Because of that first impression, and those from subsequent visits to the Garden, he was pleased for the opportunity for a formal connection with the Garden, made possible when County Executive McNary asked him to serve as a commissioner of the Botanical Garden Subdistrict of the Zoo-Museum District.



Frederick S. Wood

Currently Corporate Vice President, Contracts and Pricing, of General Dynamics—a position he has held since August, 1978—Mr. Wood spent 17 years in government service, lastly as International Business Advisor for the F16 at the United States Air Force Aeronautical Systems Division at Wright-Patterson Air Force Base in his native Dayton, Ohio. In addition to his work as Subdistrict Commissioner, he is on the Board of Directors of the St. Louis Arts and Education Council, the Coro Foundation, and the Urban League. He is also a trustee of his *alma mater,* the University of Dayton.

Profiles in Service *(continued from page 10)*

also been a commissioner of the Zoological Park Subdistrict of the St. Louis Zoo-Museum District and Director of the Missouri Historical Society. Mr. Orthwein also serves on the Board of Directors of Mercantile Bancorporation and of the Mercantile Trust Company. His support, with that of his wife, Laura Rand Orthwein, also was responsible for the creation of the Floral Display Hall in the Ridgway Center.



Joan Murphy (left) and Arden Fisher, in the last eight months, have walked over perhaps every square foot of the Garden and, through archival documents, been over every year of the Garden's 124-year history.

As volunteers in the Development office, they are working on special projects relating to the commemorative donations made to the Garden. Their most important duty is to assist members and others who are interested in making contributions to commemorate significant events and people. They spend much of their time touring people through the Garden grounds to find suitable memorials.

"We became interested in this work when I contacted the Garden to make a contribution in memory of Joan's husband," Mrs. Fisher said. "I saw all the time spent by the staff in showing me through the Garden to find a tree that I thought was suitable as a memorial to her husband; it was a tremendous amount of time."

One task they have undertaken is the compilation of a complete list of every fountain, bench, plant collection, building, and tree that has been donated in honor of a birthday, death, anniversary. And they have uncovered some interesting footnotes for many of the contributions, from a donation in the 1940s of Philippian orchids by the Honorable Dwight F. Davis who then was the Governor General of the Philippines and who instituted tennis' Davis Cup in 1900, to the World's Fair lanterns given by one-time Garden trustee Leonard Matthews (see page 7), to a set of 12 calligraphy panels held in the Garden's archives. Those panels were given to the Garden in 1977 by Mrs. Ruth Kacho, wife of the grandson of Prince Fushimi who visited the World's Fair held in St. Louis in 1904 and who created the panels following his visit.

Mrs. Murphy and Mrs. Fisher have been working every Tuesday since they began, but also are available on call if interested persons are unable to come to the Garden on Tuesdays. . . . . .

Volunteers and Excellence

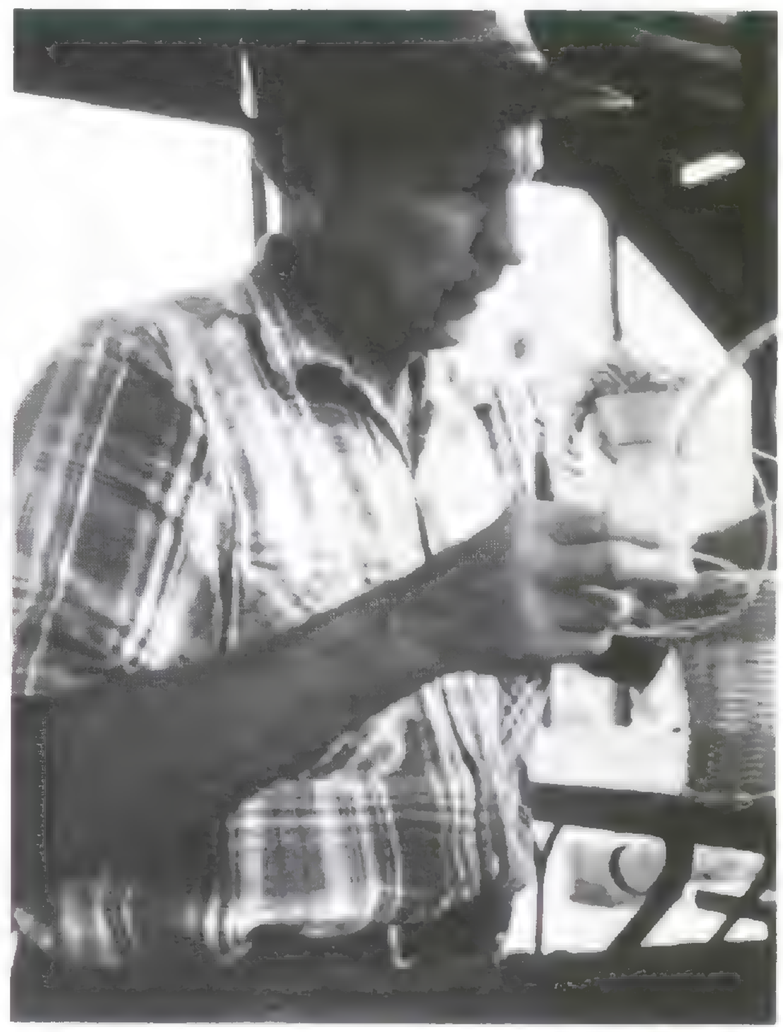
Last year, more than 500 dedicated people donated a total of 41,000 hours as volunteers at the Missouri Botanical Garden. They worked in all areas of the Garden, from mounting plants in the herbarium to propagating plants to woodworking, teaching, and book restoration. At the annual volunteer evening, June 15, three of these people were honored as outstanding volunteers of the year.

Adam Donges—an Arboretum volunteer since 1980—received the award for achievement, in recognition of the many special projects he has completed in the Arboretum. Adam built a 4-harness loom for weaving, a very complicated woodworking project. He also built a guest book stand for the Visitors Center. He has made wooden bowls and spoons used in education programs. He has done a taxidermy job on a hawk for display in the Visitors Center. He has also made windows, doors, tables and chairs, a wooden rake, 8 table looms, dozens of ax handles and repaired walls at a log cabin used for education programs. In all, he gave 1,000 hours this year on volunteer projects. He also volunteered with the prairie project—i.e. he assisted with the prairie burn and transplanting of seedlings.

The award for special services went to **Mary Wahl**, a volunteer in the library's book preservation department since 1973. For the past 10 years Mary has devoted her efforts in the library bindery to restoring leather-bound rare books. This type of work requires a great deal of skill and dedication. Her work schedule consists of two days a week throughout the year. All her work will meet professional standards of the bookbinding craft.

The third award, that for commitment, was presented to **Maurita Stuek**, a volunteer since 1973 in the Education Department. She has served as a Guide, including the term as Guide Chairman; she initiated the Volunteer Instructor Program and recently completed a term as Instructor Coordinator; she established an outreach program taking programs to Senior Citizens; and she served as a resource person for the Midwest Museum Conference program, "Volunteers: Profiles for the '80s."

—Jeanne McGilligan
Coordinator of Volunteers



Adam Donges



Mary Wahl



Maurita Stuek



The Latzer Fountain

Aside from its gardens, horticultural displays, and historic buildings, the Missouri Botanical Garden is also popular with its nearly half-million annual visitors for its fountains. Children enjoy playing with the ever-changing water levels of the Shapleigh Fountain located at the northern end of the Anne L. Lehmann Rose Garden. Others are grateful for a restful few moments sitting on the wall beside the cascading Shoenberg Fountain between the Lehmann Building and the Administration Building.

The newest fountain in the Garden is the Robert Louis Latzer Fountain located in the center of the Spoehrer Plaza (see article at right). It is the focal point of the visitor's entrance into the exterior Garden. Like the curve in the three walls of the Plaza the Fountain's spray is engineered to reflect both the arc of the Ridgway Center's barrel vault and the curves of the windows in the century-old Linnean House.

The Latzer Fountain is named in memory of Robert Louis Latzer who, before his death in 1974, was President and Chairman of the Board of Pet, Inc. which he joined in the 1920s. According to his daughter, Mrs. John L. Donnell, the Fountain was an appropriate memorial to the late Mr. Latzer because of his interest in the Missouri Botanical Garden—late in his life, he visited the Garden almost every week. He was also interested in plants, particularly the cultivation of dogwoods.

Besides the Garden, he was also involved in the University of Illinois and the public library in his hometown of Highland, Illinois—the Louis Latzer Public Library, named in honor of his father.



The Spoehrer Plaza

The first area visitors enter after leaving the Ridgway Center is the 1,300 square-foot Spoehrer Plaza, named in memory of Hermann F. Spoehrer. Its most prominent features are the Robert Louis Latzer Fountain (see article at left) and an inner perimeter formed by Kentucky coffeetrees and other plantings, including dwarf cranberry bushes, dwarf holly, and seasonal flowers.

With its brickwork, benches, plantings, and fountain, the Plaza presents an attractive area for visitors in which to rest or stroll, but its creation presented its designers (Environmental Planning and Design) with some unique problems, principally: how to create an area that would be a suitable transition between the modern structure, the Ridgway Center, and the surrounding Garden, which was created more than 100 years ago, created even before the Civil War. The first building that visitors walking onto the Plaza would see was the Linnean House, built in a time even before Edison's electric light was in common use. Like the Ridgway Center itself, the Spoehrer Plaza had to provide a link with the Garden's rich past as well as a continuation of the Garden's tradition.

The solution arrived at by designers at E.P.D. can give those of us who are not designers an interesting insight into both the design statement made by the Plaza through its various elements (like the words, phrases, and clauses of a sentence, the individual parts of a garden or a building combine to "state" an idea that is greater than the mere sum of its elements) as well as the process used by the designers in the creation of the Spoehrer Plaza.

The use of brick in the Plaza provides a visual transition between the very modern Ridgway Center and the historic (and brick) Linnean House.

The most interesting point about the Plaza, however, are the curves in the south, east, and west walls. These were designed to reflect both the curve in the center barrel vault of the Ridgway Center and the curved windows of the Linnean House.

Hermann F. Spoehrer, in memory of whom the Plaza is named, was a St. Louis engineer who was deeply committed to the St. Louis community. He was especially interested and involved in Junior Achievement, and the engineering school at Washington University.

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July, 1983

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May–June 1983

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Art in the Garden

Calder in Retrospect

The Garden will feature an exhibit of the work of Alexander Calder from September 1 through October 2 in the Ridgway Center. Containing approximately 25 pieces of Calder's sculpture, the exhibit is the first major St. Louis showing of the late artist's work in nearly two decades, and is a cooperative effort of the Garden and the Greenberg Gallery.



The Blue Handle, 1975



Red and Blue on Black and White, 1969

Boehm Flower Show

The Garden will feature an exhibit of porcelain flowers, created by the studios of Edward Marshall Boehm, from August 6-19 in the Floral Display Hall. Including more than 50 of the studios' most important floral pieces, the exhibit will be the largest public showing ever of porcelain flowers, according to Frank J. Cosentino, President of Boehm International, the company that has continued the late Mr. Boehm's tradition of producing the finest in porcelain sculpture. The exhibit features porcelain flowers created in honor of Pope John Paul II, Queen Elizabeth, the Prince and Princess of Wales, and Nancy Reagan. The Garden has a permanent exhibit of Boehm porcelain birds and flowers in the Spink Gallery in the Ridgway Center. (Pictured: Prince Charles and Lady Diana Rose Royal Centerpiece.)



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Missouri Botanical Garden Bulletin

Volume LXXI, Number 6
October, 1983

State, National Recognition to Garden Program

The Missouri Botanical Garden's environmental education and leadership training program, ECO-ACT, was cited recently as an exceptional educational program as part of the National Science Teacher's Association "Search for Excellence in Science Education" (SESE). ECO-ACT was one of two programs honored for the state of Missouri and one of fifty recognized nationally by the 40,000 member organization of science educators.

Charles R. Granger, Chairman of Biology at the University of Missouri-St. Louis and Chairman of the Missouri SESE Committee, said, "Your efforts at Missouri Botanical Garden in developing an outstanding program has brought distinction to the Garden. Beyond that, of course, is the excellent learning experiences you have provided many students through your initiative, creativity, and sound educational philosophy."

According to Dr. Granger, nominations of more than 100 programs across the state of Missouri were received. The other cited program was Union Electric's "Energy Education Program." ECO-ACT and the "Energy Education Program" were submitted, along with top programs from the other 49 states to a national N.S.T.A. for evaluation for national recognition.

Descriptions of the 50 cited programs, which include both Missouri entries, will be published by N.S.T.A. so that they may be used as models for similar programs by other institutions.

ECO-ACT was created in 1981 and provides an opportunity for talented high school students to learn about environmental issues and to develop leadership skills. NSTA is the world's largest organization dedicated to the promotion of excellence in science education, from elementary school through college-level curricula.

—David A. Wilson, Manager, *ECO-ACT Program*







Chocolate: Food of the Gods

In 1712, a newspaper editorial warned its "fair readers to be in a particular manner careful how they meddle with romances, chocolates, novels, and the like inflamers which [are] very dangerous."

Here is not the place to explore the heed

(continued on page 7)

Comment



Two significant anniversaries for the Missouri Botanical Garden will occur in the next few months. Beginning in January, we will be celebrating our 125th anniversary with a year-long schedule of special events. You will be reading and hearing much more about this in the weeks ahead.

The second important anniversary will be marked later this month, on October 14-15, when we will hold our thirtieth annual Systematics Symposium. Begun in 1954, the symposium has each year brought botanists and other scientists to the Garden to discuss developments in systematics; the meetings have served to promote the dissemination of facts, theories, syntheses, and conclusions on topics of interest to biologists. Over the last decade, each year more than 300 scientists visited the Garden for the symposium, coming from across our own country as well as from other countries throughout the world. Last year, for example, we were fortunate to have as our guests the largest contingent of scientists from the Peoples' Republic of China ever to attend a botanical meeting in North America. In the 30 years the Garden has held it, the symposium has become one of the most important botanical meetings in the U.S.

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Gardening in St. Louis

Fall Color



Fall color is something to be excited about. People from Florida, Hawaii, and Southern California travel thousands of miles to the Midwest and Northeast to witness this beautiful phenomenon.

Even though most of us in St. Louis take the fall display for granted, it only happens because of a series of involved physiological and chemical changes in plants. During the summer, most trees and shrubs display green leaves. The color of these leaves is caused by the presence of a complex material called *chlorophyll.* As fall approaches, a corky layer of cells, called the *abscission* layer, forms on the leaf stalks where they attach to branches. This corky layer restricts the flow of nutrients to the leaves which then causes the degeneration of chlorophyll. As a result, the other pigments which have been in the leaves, but were masked by the large concentration of chlorophyll, become evident. These pigments include *carotene* (produces the color found in carrots and butter) and *xanthophyll* (yellow or brown pigment).

The blazing crimson colors are caused by another material called *anthocyanin.* This pigment is produced as a result of large amounts of sugar manufactured in the leaves during bright fall days. These sugars become entrapped in the leaves because of the abscission layer and due to the cooler temperatures which slow down the flow of this material from the leaves to the rest of the plant. In short, to insure brilliant red foliage, two conditions must be met. The days should be warm and sunny and the evenings should be cool (45° F. or lower).

Certain leaves and shrubs have an inherent quality of outstanding fall color. It is worth searching-out these plants at your favorite nursery to guarantee the most striking display of fall color.

Trees that have red fall foliage include:

Allegheny Serviceberry, *Amelanchier laevis*
American Hornbeam, *Carpinus caroliniana*
Black Oak, *Quercus velutina*
Black Tupelo, *Nyssa sylvatica*
Bradford Callery Pear, *Pyrus calleryana "Bradford"*
Cornellian Cherry, *Cornus mas*
Crimson King Norway Maple, *Acer platanoides "Crimson King"*
Flowering Dogwood, *Cornus florida*
Franklinia, *Franklinia altamaha*
Japanese Maple, *Acer japonicum*
Katsura Tree, *Cercidiphyllum japonicum*
Lavalle Hawthorn, *Crataegus × lavallei*
Red Maple, *Acer rubrum*
Red Oak, *Quercus rubra*
Sassafras, *Sassafras albidum*
Scarlet Oak, *Quercus coccinea*
Shumard's Oak, *Quercus shumardii*
Sourwood, *Oxydendrum arboreum*
Stewartia, *Camellia pseudocamellia*
Sugar Maple, *Acer saccharum*

Trees with yellow foliage in the fall are:

Beeches, *Fagus* spp.
Ginkgo, *Ginkgo biloba*
Hickories, *Carya* spp.
Norway Maple, *Acer platanoides*
Ohio Buckeye, *Aesculus glabra*
Redbud, *Cercis canadensis*
White Ash, *Fraxinus americana*
White Oak, *Quercus alba*
Yellowwood, *Cladrastis lutea*

Shrubs with red foliage are:

Arrowwood Viburnum, *Viburnum dentatum*
Black Haw Viburnum, *Viburnum prunifolium*
Bridalwreath Spirea, *Spiraea prunifolia*
Chenault Coralberry, *Symphoricarpos × chenaultii*
Cranberry Cotoneaster, *Cotoneaster apiculata*
Drooping Leucothoe, *Leucothoë fontanesiana*
Fragrant Sumac, *Rhus aromatica*
Glossy Abelia, *Abelia × grandiflora*
Gray Dogwood, *Cornus racemosa*
Koreanspice Viburnum, *Viburnum carlesii*
Linden Viburnum, *Viburnum dilatatum*
Mapleleaf Viburnum, *Viburnum acerifolium*
Nannyberry Viburnum, *Viburnum lentago*
Northern Bayberry, *Myrica pensylvanica*
Oregon Hollygrape, *Ilex aquifolium*
Oriental Photinia, *Photinia villosa*
Possum Haw, *Ilex decidua*
Rugosa Rose, *Rosa rugosa*
Smooth Sumac, *Rhus glabra*
Virginia Rose, *Rosa virginiana*
Wayfaringtree Viburnum, *Viburnum lantana*
Wintercreeper Euonymus, *Euonymus fortunei*

Shrubs with yellow foliage include:

Chinese Witchhazel, *Hamamelis mollis*
Kerria (Jetbead), *Kerria japonica*
St. Johnswort, *Hypericum prolificum*
Star Magnolia, *Magnolia stellata*
Vernal Witchhazel, *Hamamelis vernalis*
White Fringetree, *Chionanthus virginica*

New Nursery Source Manual

Searching for a particular tree or shrub for your garden? Help is on the way from Brooklyn Botanic Garden's *Nursery Service Manual.* Thirteen hundred trees and shrubs are briefly described with several sources listed. The Handbook is designed for easy use and handy reference. Each plant entry includes size, color, leaf size and special attributes where they apply. Hardiness zones are keyed to the Arnold Arboretum hardiness zone map and followed by listed sources (St. Louis is in hardiness zone #6).

This handy and inexpensive ($2.25) publication is available in our Garden Gate Shop.

—Steven A. Frowine, Public Horticulture Specialist

Comment *(continued from page 2)*

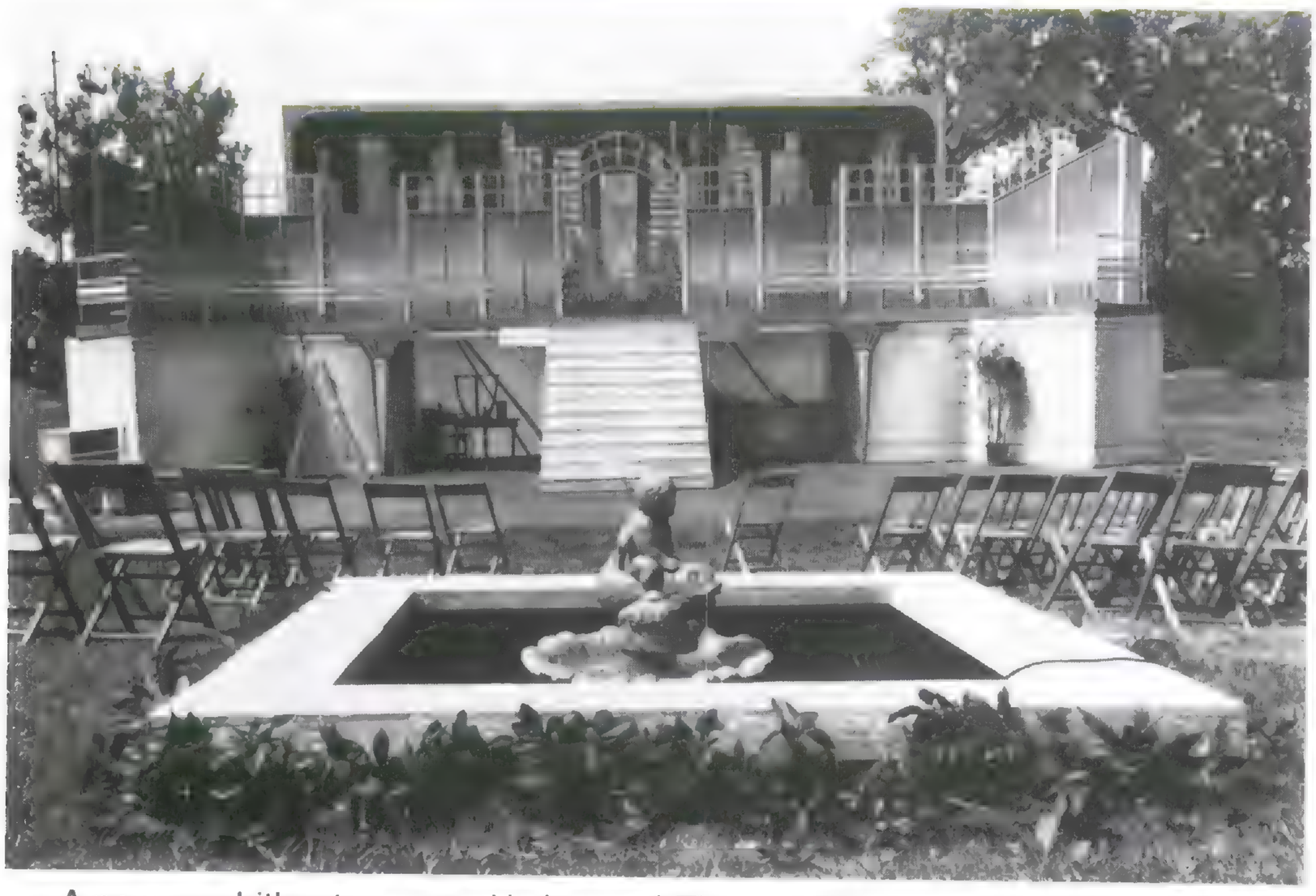
That the symposium has come to be so highly regarded is due in a large part to the excellent speakers and moderators we have been fortunate enough to attract, who have included many of the world's foremost biologists. But it can also be attributed to the fact that the Garden is today one of the world's largest botanical gardens, and certainly is the most active botanical research institution. The world-wide community of biologists looks to the Garden as a leader in the field of systematics, a reputation that stems from the size of our herbarium (with more than 3 million specimens, one of the ten largest in the world), our library (which holds nearly every book on systematic botany published since the fifteenth century) and the extremely high quality and extent of the work of our botanical staff, which currently conducts fieldwork in more than a dozen tropical countries.

That we have held the symposium regularly over the last 30 years underscores our commitment to promote the necessary communication between scientists, as well as our position as one of the most significant scientific institutions in the world.

Peter H. Raven

The symposium has been supported by the National Science Foundation since 1955.







A new amphitheater, named in honor of a long-time Garden supporter, Sidney S. Cohen, has been opened just north of the demonstration vegetable garden. The amphitheater will be used annually for performances connected with the Garden's popular Japanese festival which occurs each June. It will also be used to stage plays and to present concerts and dance recitals. Shown in the photograph, it was used recently for the Theatre Project's production of Shakespeare's *Much Ado About Nothing*. According to Chairman of Horticulture, Alan Godlewski, the plantings around the amphitheater will include, along the crest, conifers such as pines and spruce. Behind the stage will be a line of clipped juniper hedge; along the front and sides there will be a number of deciduous trees to produce shade.

There is a new addition to the popular Anne L. Lehmann rose garden. Located at the rose garden's north end, near the Shapleigh Fountain, the development will feature ancestral roses, including species and many old-fashioned hybrids. According to the Garden's Chairman of Horticulture, Alan Godlewski, visitors to the Missouri Botanical Garden will now be able to trace the development of the rose—known as America's favorite flower—from ancestral roses to modern roses.

Immediately adjacent to the new development is an area of the rose garden used to test new experimental hybrids for possible citation as All-America Rose Selection, the highest honor a new rose can given. The highest level of the rose garden, that nearest the Victorian style gazebo, displays many roses which have been honored by the A.A.R.S. citation; these are the finest commercial hybrids available.

The new development in the Anne L. Lehmann Rose Garden is dedicated to the memory of her late husband, John S. Lehmann, who with his wife was a longtime garden supporter. According to Mrs. Lehmann, this memorial is extremely appropriate since Mr. Lehmann was an enthusiastic amateur rosarian with a special fondness for the species and old-fashioned hybrid roses.

Letter From Madagascar



ylang ylang

Explorers and merchants of two centuries ago were attracted to Madagascar because of its prime timber for shipbuilding and export, and ships returning to Europe from India would stop at this large island off the east coast of Africa to pick up cargos of the abundant rice. A century later, the island continent became known as the Red Island, a name even more fitting today. Madagascar has always had an aura of fascination: peopled by natives whose religion mixes Christian practice with traditional worship of the dead and the ancestors; source for esteemed specialties such as vanilla, black pepper, ylang ylang, and cloves; former home of the giant bird "Aepyornis," and present home for one of the world's most unusual assemblages of plants and animals, including over 20 kinds of lemur, dainty little relatives of the apes and monkeys, it is a land apart.

When I found out last summer that I was to go to Madagascar, I soon found out too that there had been almost no information published on the life of the Island for the preceding seven years. In 1975, a change of government led to difficulties for outsiders, and little had appeared in print. Several other Garden scientists had worked in Madagascar, but not since the change of government. To be the first scientist in such a long time to go there with the government's blessing spoke highly of the efforts made by the Garden and others on our behalf to open up scientific inquiry into this special place. Relations have improved to such a degree that the Garden will send Dr. Laurence Dorr to Madagascar for a three-year residence, and Dr. Voara Randrianasolo, scientific liaison officer with the Madagascar, or Malagasy, Government, is visiting the Garden for study until March of next year. My advance visit was useful for its own scientific ends and was also good for strengthening ties with the "Red Island."

My own efforts were directed at inventorying all members of the Solanaceae, or potato and tobacco family, occurring on Madagascar as part of a worldwide study of the group. On the way over in mid-April, I spent a week in Paris examining the plant collections at the Muséum d' Histoire Naturelle. During most of the period from the turn of the century until 1960, Madagascar was under French rule, and French botanists had built up a large representation of Malagasy plants. From this it appeared that a number of quite unusual Solanaceae were to be found on Madagascar, and my subsequent field work proved this to be true.

Once in Tananarive, the capital, I examined collections of the Parc de Tsimbazaza, the national botanical garden and park, and then after transportation difficulties were resolved, I made a three week, 2,000 mile trip around the south of the island. The area of Tananarive is a pleasant upland of about 4,000 feet elevation. As winter was just beginning, I wore a sweater except during the middle of the day. My first forays looking for plants near the capital were a great disappointment. Roadsides and gardens were bright with flower and foliage color, but all were plants I had seen before in tropical and temperate America.

There were no native plants. It is said that when the French first arrived in the area, all the native vegetation had been removed, and what is seen now consists of intended and accidental introductions of plants from almost everywhere else in the world. In fact, today we estimate that only 7% of Madagascar retains its natural vegetation.

On the trip south, I passed grand landscapes of semi-desert and prairie reminiscent of Montana or Utah. Then in the extreme south, just outside of the tropics, were the most unusual scrub forests I had ever seen. Plants of the Didieriaceae, a plant family known only to Madagascar, spread wand-like, thorny arms upwards, and for hundreds of miles the dry scrub was dominated by these unworldly plants. In this area, all the plants were native, and almost none of them were known outside of Madagascar. Here in a small private nature reserve, I saw lemurs feeding in the trees, and I found some of the unusual Solanaceae I had been seeking.

Madagascar is a fragment of an ancient southern continent, Gondwanaland, which 110 million years ago was made up of the present continents of South America, Africa, Australia, and Antarctica, and some of the plants there now date back through geological history to the time this old continent was intact. On nearby Africa, the original plants from all but the extreme south were removed during past environmental catastrophes, so the plants now on Madagascar are the only living representatives of this primaeval flora. Not surprisingly, many are unique. In the extreme south, I found several species of Solanaceae that may have been unknown to science, and in any case which have no other close relatives among this large and widespread group of plants.

In Paris I had seen collections of several unusual plants from the north of Madagascar, so I made a trip north, stopping at the island of Nossi Bé, and also at the port city of Diégo Suarez. Nossi Bé is all the romantic tropics should be. The evening taxi from the airport to town went through sweetly scented fields of ylang ylang, the base for the fine perfumes of France. Here too are the plantations of vanilla and of black pepper, the latter supplying material for the reknowned Malagasy "steak au poivre" or pepper steak which uses green peppercorns. Nossi Bé also has fine beaches and resort hotels, but the original vegetation is no longer present.

On the flight from the north back to Tananarive, I was reminded why the island deserves its nickname. Except for the dry forests to the south, forests have been cut almost everywhere, and fires are usually to be seen, making sure that natural vegetation does not recover. The "terra rossa" or red earth of the island is exposed over most of its area, making it truly a "Red Island." Because the flora of the island is unique and is also so unusual, and because it holds clues to the origin of flowering plant groups everywhere, it is essential that we continue study of this plant assemblage. In areas where there is still forest, there is heavy cutting for fuelwood. The time when Madagascar could provide abundant supplies of ship timbers has long gone, and the time for studying the remaining native plant life is tragically short. *—W. G. D'Arcy, Associate Curator*

Reading Those Tea Leaves







Last year, there were about two million tons of tea produced in the world: slightly less than one pound for each man, woman, and child on earth. If you figure that a single tea bag weighs a tenth of an ounce, that would come to around 640 billion cups of tea, or a cup every other day or so for everyone on the planet. To quote Ernie Kovaks from a quarter century ago: That's a lota tea. (Ernie, of course, was making a pun on a brand name we won't mention here. But his comment stands.)

Like many of the other important agricultural products of our time (coffee and chocolate, for example) the story of tea is steeped (sorry) in legend, myth, and intrigue. Just as legends describe a divine origin for coffee (according to the Arabs) and chocolate (the Aztecs), so are there tales of a supernatural genesis of tea: according to the Japanese, the Buddhist saint Bodhidharma, during his meditations one day, fought with sleep until he cut off his eyelids and threw them onto the ground where they rooted and became tea plants. China, accepted as the country of origin for the plant (now known as *Camellia sinensis* in the Theaceae or tea family) had a legend crediting 28th Century B.C. emperor, Shen Nung, with the creation of the beverage. He was boiling water, and leaves from a nearby bush floated into the pot. In a medical book attributed to him, but not actually written until the third century A.D.—three millenia after his death—(the reference to tea does not appear until an edition published yet another 400 years later)—it is written "It quenches the thirst. It lessens the desire for sleep. It gladdens and cheers the heart." Much of the benefit he cites, of course, can be attributed to the caffeine content of tea; between 2.5% and 4.5% of the dry leaf is this alkaloid. Per cup, this is slightly less than the caffeine content of coffee; tea also contains a small amount of another stimulant, theophylline.

For the first several centuries of its use, tea was regarded as a medicinal beverage, and was considered beneficial for tumors "that come about the head. It dissipates heat caused by the phlegms or inflammation of the chest." (This coming also from *Pen ts'ao,* Medical Book, of Shen Nung.) Some of these many-century old claims for the medicinal value of tea have, in fact, been borne out: aminophylline, which is used in the treatment of angina pectoris and as a bronchidialator, was first derived from tea. (Like many drugs, it is now manufactured synthetically.)

By the fifth century A.D., tea had become an important article of trade and by the sixth century it was no longer considered to be principally a medicinal beverage but was being consumed for pleasure. By the late eighth century, tea was so popular that Chinese tea merchants commissioned a book—*Ch'a Ching (Tea Classic)* that recounted the history of the beverage and praised its many virtues. It also outlined the proper procedures for the baking of the fresh leaves and the brewing of the beverage, as well as the drinking of it. For example:

"Pour it into cups so that it will come out frothy. The frothy patches are the ornamentation to the decoction and are called 'mo' if thin, 'po' if thick. When they are fine and light, they are called flowers, for they resemble the flowers of the jujube tree tossing lightly on the surface of a circular pool.

"They should suggest eddying pools, twisting islets or floating duckweed at the time of the world's creation. They should be like scudding clouds in a clear blue sky and should occcasionally overlap like scales on fish. They should be like copper cash, green with age, churned by the rapids of a river, or dispose themselves as chrysanthemum petals would, promiscuously cast on a goblet's stand."

Is there still such poetry in the dunking of a tea bag into a cup of just boiled water?

The knowledge of tea did not reach Europe until eight centuries later when, in 1559, a travel narrative, *Navigatione et Viaggi,* by the then-noted author Giambattista Ramusio was published. Ramusio, who died two years before his work was published, reported in a section entitled, "Tea of China," that tea was a hot drink possessing great medicinal qualities. Early in the next century the Dutch East India Company began importing tea to Europe from China and Japan. Almost a century after Ramusio brought tea to European attention, a London coffee house (coffee was introduced into Europe early in the 1500s) began selling the prepared tea leaf at a cost of $4 to $15 per pound. Within another century, that is by the first quarter of the 1700s, tea was commonly used in Europe.

The tea plant, *Camellia sinensis,* is—as is obvious from its generic name—related to the camellia that is a popular ornamental (*Camellia japonica* and its many cultivars). *C. sinensis* (originally named *Thea* sinensis by Carl Linnaeus in his *Species Plantarum* of 1753) is a small tree that grows to about nine meters (approximately 27 feet high). If you are interested in seeing a specimen of the tea plant, there is one in the Linnean House, along with many of the popular varieties of the *C. japonica.*

Chocolate: Food of the Gods (continued from page 1)

paid to the warning against romances and novels, but we can say that the admonition against chocolate has been ignored.

Of the three and a half billion pounds of candy consumed in the United States each year, almost 60% or two billion pounds are chocolate. This is *candy* consumption alone, now. According to the Chocolate Manufacturers' Association, the per capita consumption of all chocolate products in 1982 was 9.3 pounds, making chocolate a ten billion dollar industry here. The Association reported that the per-person consumption had increased during the latest year from its low of 8.3 pounds in 1980.

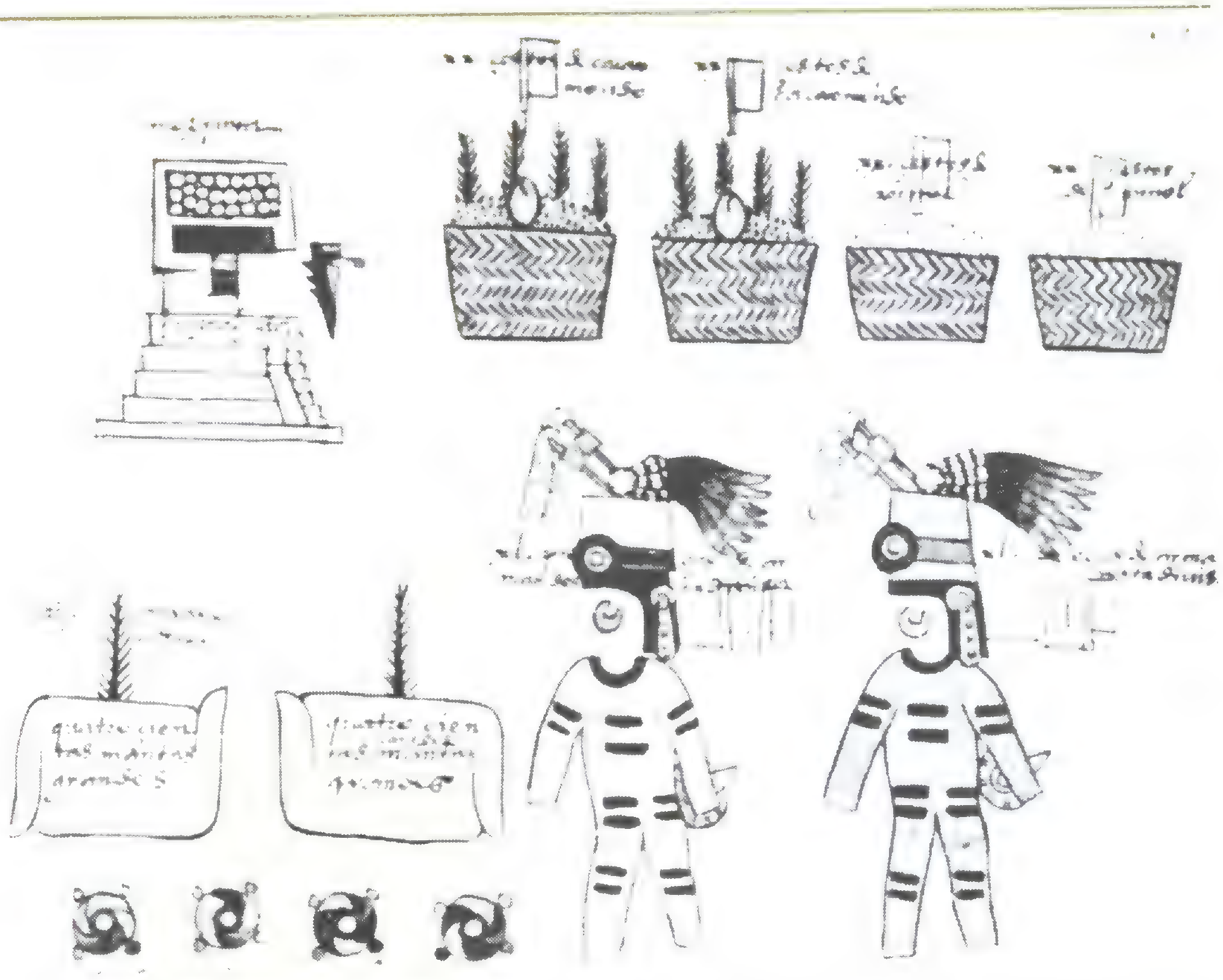
(For comparison, the annual per capita chocolate consumption in Switzerland is 22 pounds, considerably more than the highest American total of 10.9 pounds per capita in 1972.)

Chocolate comes from the cacao (not cocoa) tree, *Theobroma cacao,* a small evergreen native to the new world tropics. Reaching a height of only 25 feet, it naturally grows in the shade of taller trees. (Although some agricultural experiments have shown that its yield may be increased by the reduction of shade and that cacao trees may flourish best in 50% shade.) The trees require 80 inches or more of rainfall per year and temperature variations of 65-95°F.

Although native to the American tropics, *T. cacao* is cultivated in tropical Africa as well as in the new world. The leading producers of chocolate are Ghana, Nigeria, Brazil, the Ivory Coast, and Cameroon.

For commercial growers and chocolate lovers, the most important part of *T. cacao* is its seeds which are found in football shaped pods (technically berries) that weigh about ¼ pound each. Each pod contains 30 to 50 seeds and, although it produces about 6,000 flowers, each tree yields only 20 to 30 pods.

Each tree's yield is only two to three pounds of seeds (the cocoa beans) in each harvest, although under good conditions an acre of cacao trees may yield as much as two tons of dry powder.



From the ***Codex Mendoza****, an early 16th century Aztec manuscript. The symbols represent the prescribed tribute to the emperor which included 40 baskets of ground cacao every 80 days.*

And from these seeds comes the food of the gods.

Actually, more than opinion, chocolate *is* literally the food of the gods: its genus name, *Theobroma*, applied by the great Swedish scientist Carl Linnaeus in 1737, comes from the Greek *theos* (god) and *broma* (food). While Linnaeus' name for the tree might well have been an expression of his opinion of chocolate (chocolate had been known in Europe for about two and a half centuries by then), it is more likely his reflection of the Aztec myth about the origin of chocolate.

They believed that Quetzalcoatl, the god of air, brought cacao seeds to man, and like Prometheus the bringer of fire, was severely punished by the other gods for giving to mortals such a cherished thing.

The Aztecs consumed chocolate by making a beverage from it, thus their name and the origin of our word chocolate, *choco* (foamy) *atl* (water). In the court of Montezuma, 2,000 cups of *chocoatl* were consumed daily. The king himself drank 50. Cortes, the Spaniard who conquered the Aztecs, reported that the drink gave "strength to march all day long."

For the Aztecs and other Indian civilizations of Central America, chocolate was more than a food, however; the Aztecs used the beans for currency. Ten would buy a rabbit; one hundred beans would purchase a healthy slave. Some merchants counterfeited cacao beans by removing the cocoa from the shell and replacing it with mud or black wax. Since many transactions involved thousands of beans, not all of them could be examined by the receiver.

Cacao also figured prominently in religious, marriage, birth, and death rituals.

A ritual in Yucatan, called *tac haa* (literally, "serve chocolate") specified that one would serve chocolate to the father of a girl whom one's son wished to marry. Some marriage customs called for the bride and groom to exchange a certain number of cacao beans; others specified the number of beans a woman must include in her dowry.

In some cultures, an incumbent office-holder would hand down cacao beans to his successor. In other cultures chocolate could be consumed only by those of high rank; persons of the lower classes were forbidden.

Cacao was also prescribed as a medicine to cure abdominal pain, to prevent or counteract certain poisons, to disinfect cuts, and to overcome mental apathy and marked timidity.

(continued on page 9)

FOR Younger MEMBERS

Fall Fruits



The produce counter at the grocery store is a multi-colored feast for the eyes during the fall season. Many of the fall fruits are favorites of young children, and offer an exciting sensory experience as well as an enjoyable hunt for seeds. Some seeds are edible; others are not. Each fruit has its own characteristic shape, color, texture, smell, and taste. What can your child discover about fall fruits?

You will need: An assortment of fall fruits, such as apple, pumpkin, orange, pomegranate, avocado, peanut (in the shell); blunt plastic knife; plate.

What to do: Try to take your child with you to the grocery store to select four or five fall fruits. When you arrive home, set the fruits on a plate. Select one fruit to explore; talk about its name, color, texture, shape, smell. What might the fruit look like on the inside? Show your child how to use the blunt knife safely, and carefully cut open the fruit. How does the inside differ from the outside? Is it juicy or dry? How many seeds does it contain? Talk about seed number and pattern or arrangement within the fruit. Taste some of the fruit. Decide if it is sweet, sour, salty, wet, mushy, crunchy. Is the seed(s) edible? Why or why not?

Proceed in a similar manner with the remaining fruits. If a pumpkin is opened, remove the seeds and dry them thoroughly overnight. Roast them in a 350° oven along with butter and salt until the seeds are brown—about 20 minutes. They then may be eaten.

Save seeds from each fruit. Try planting some of them and watch what happens! *—Ilene Follman*
Education Consultant

Make A Fall Mobile

Autumn is a time of falling leaves and ripening seeds. It is also a good time to make a mobile. Walk around your neighborhood or yard or use the Collector's Bag at the Garden. Watch for pretty colored leaves and seeds or nuts that have fallen to the ground. Collect the prettiest or most interesting for your mobile.

A mobile is a type of sculpture. It can hang from the ceiling, a door frame, a light fixture, or any other place where its parts can be easily moved by currents of air.

To make your mobile you will need some yarn or thread and a twiggy branch without leaves. See if you can find a branch on the ground or have an adult help you cut a small branch from a brush or tree. Tie a piece of yarn to the center of the branch so that the branch balances or stays level. Now cut different length pieces of yarn. Tie a colorful leaf or a seed to the end of each piece of yarn. Tie the other end of the yarn to the branch. Make sure the branch still balances.

Now your mobile is finished. Have your parents help you hang it up where the air will gently move the leaves.

—Linda Sanford
Education Department

Upcoming Family Classes

The following classes all require pre-registration and payment of fees. For information call: 577-5140.

October 1	*Reptile Rendezvous* 10:00 to 11:30 a.m.
October 8	*Family Birding Expedition* 9:00 to 11:30 a.m.
October 15	*Pumpkin Farm Trip* 9:00 a.m. to 2:00 p.m.
October 29	*Halloween Party* 1:00 to 3:00 p.m.
November 5	*Family Fall Stroll* 10:00 a.m. to 11:30 a.m.
November 19	*Holiday Party Cooking Class* 10:00 a.m. to Noon
December 10	*Family Wreath Workshop* 10:00 a.m. to Noon

Did You Know...

Every fall, squirrels are busy planting trees. Of course the squirrels don't know that's what they are doing. They are hiding nuts for their winter food.

A squirrel digs a little hole, puts in a nut like an acorn or walnut and covers it up with loose dirt and leaves. In the winter, the squirrel won't remember where he buried them but he will find many of the nuts by smell. In the spring the lost nuts will sprout and start to grow into trees.

See if you can watch a squirrel while he's busy planting trees.

Till next time—
Education Department

CALENDAR

Note: New Garden hours, effective until May 1, 1984: 9 a.m.-4:30 p.m.

October

OCTOBER 1-8

October 1: **Lithops Exhibit**, Desert House (through October 30). Ever seen living stones? The Garden has one of the most complete collections of Lithops (living stones) anywhere.

Staghorn Fern Exhibit, Climatron (through September 30).

October 2: **St. Louis Chamber Chorus Concert**, Shoenberg Auditorium, 3 p.m. Why not come early, have brunch, take a short stroll through the Linnean House, say, and the Scented Garden, and then enjoy a fine concert of music with a Spanish accent?

October 6: **Korup**, a film about the tropics. Shoenberg Auditorium, 10:30 a.m. and 7:30 p.m.

October 8: **Craft Fair**, Ridgway Center, all day (on 10/9 also). Come see—well, so many different crafts and craftspeople we can't mention them here.

OCTOBER 9-15

October 10: **Kurosawa Koto Ensemble Concert**, Shoenberg Auditorium, 8 p.m. An outstanding group on a national tour.

October 12: **Lecture**, Shoenberg Auditorium, 10:30 a.m. and 8 p.m. Dave Vismara sheds some light on "21st Century Roses."

October 13: **Cry of the Muriqui**, a film about the tropics, Shoenberg Auditorium, 10:30 a.m. and 7:30 p.m.

Continues: **Lithops Exhibit**

Staghorn Fern Exhibit

OCTOBER 16-22

October 16: **Israeli Festival**, Ridgway Center (through 10/20). A celebration of Israeli culture through films, exhibits of art and photography, and music.

October 19: **Lecture**, Shoenberg Auditorium, 10:30 a.m. and 8 p.m. Alan Godlewski, Chairman of Horticulture, introduces and comments on the film, *Trees that Merit Attention*.

October 20: **Island of the Moon**, a film about the tropics, Shoenberg Auditorium, 10:30 a.m. and 7:30 p.m.

October 22: **Robin Hood**, Shoenberg Auditorium, noon. $1 for Members. Another in our series of Disney cartoon favorites.

Continues: **Lithops Exhibit**

Staghorn Fern Exhibit

OCTOBER 23-31

October 24: **Forest in the Clouds**, a film about the tropics, Shoenberg Auditorium, 10:30 a.m. and 7:30 p.m.

October 25: **W. S. Merwin**, Shoenberg Auditorium, 8:00 p.m. One of America's finest contemporary poets gives a reading of his works.

October 26: **Lecture**, Shoenberg Auditorium, 10:30 a.m. and 8 p.m. "Futuristic Gardening" is explored by Steven A. Frowine.

October 27: **Lecture**, Shoenberg Auditorium, 10:30 a.m. and 7:30 p.m., *"The American Garden" in an English Setting* by Lady Jean O'Neill.

October 28-30: **Two Alfred Hitchcock thrillers** (titles to be announced), Shoenberg Auditorium, 7:30 p.m. Members: $2. Think about it: how come every time a new thriller opens, the theatre ads always compare it to something by Hitchcock? It's because no one ever made thrillers better than Hitch. Come and see these: but bring a friend you can grab onto. These movies are no exception from any others—they're shown in a dark theatre.

November

NOVEMBER 1-5

November 2: **Lecture**, Shoenberg Auditorium, 10:30 a.m. and 8 p.m. "Science Fiction Comes True: Plant Genetic Engineering" by Dr. Robert Fraley of Monsanto.

November 4: **Members' Preview of the Fall Flower Show**, see invitation attached.

November 5: **Fall Flower Show**, Floral Display Hall (through November 27). One of St. Louis' favorite flower exhibits.

Food Plants Exhibit, Climatron, through November 27. A smorgasbord of common and exotic tropical food plants.

NOVEMBER 6-12

November 6: **St. Louis Chamber Chorus Concert**, Shoenberg Auditorium, 3 p.m.

November 8-9: **Holiday Preview Sale**, Garden Gate Shop, 9 a.m.-8 p.m. As always, the finest gifts for 20% off. And some refreshments.

November 9: **Lecture**, Shoenberg Auditorium, 10:30 a.m. and 8:00 p.m. "Amazing and Wonderful: Test Tube Orchids" by expert Herman Pigors.

NOVEMBER 13-19

November 12: **Ann Beattie**, Shoenberg Auditorium, 8 p.m. If you are at all in dobut about the quality of contemporary American Fiction, come hear Ann Beattie read from her work; she'll leave no doubt there are still good writers among us. And she's one of the best.

Continues: **Fall Flower Exhibit** (through November 27)

Food Plants Exhibit (through November 27)

NOVEMBER 20-30

Continues: **Fall Flower Exhibit** (through November 27)

Food Plants Exhibit (through November 27)

Chocolate: Food of the Gods *(continued from page 7)*

Its use for the last two symptoms and as a giver of strength, as mentioned by Cortes, can be attributed to theobromine, an alkaloid related to coffee (both belong to a group called *xanthine* ankaloids). Theobromine is the least stimulating of the xanthine alkaloids; caffeine (found in trace amounts in cacao), the most.

Because of the presence of the stimulant theobromine and because it has been shown that chocolate consumption reduces a body's ability to absorb calcium, many nutritionists recommend that parents limit their children's chocolate consumption.

One piece of good news relating to the health of chocolate lovers, however, is that, contrary to the long-held belief, laboratory tests have shown that there is *no* connection between chocolate consumption and the occurrence of that adolescent scourge, acne.

Chocolate lovers, and the curious-in-general, can see several specimens of the chocolate tree, *Theobroma cacao*, in the Climatron during the Food Plant Exhibit, November 5-27. It's one of the many economic, tropical plants displayed in that geodesic dome greenhouse.

The Garden Gate Shop also has several books giving the history of chocolate, as well as recipes.

Profiles in Service



Sydney M. Schoenberg, Jr.

Beyond any doubt, the Missouri Botanical Garden is one of the most beautiful in the world. The Garden attracts a half a million visitors each year and is one of St. Louis' primary tourist attractions. The point was made by one of the world's foremost living landscape designers, Roberto Burle Marx, in his Greensfelder lecture last May, that green spaces and gardens are an essential part of an urban area; that people need them for psychological and spiritual refreshment. Shaw's Garden, he stated, was one of these places.

Sydney M. Shoenberg, Jr., a member of the Garden's Board of Trustees since 1972, believes in this so strongly that for more than a decade he has given—as have all the Garden's trustees—more hours of service than can be calculated. Through his position as an officer of the Shoenberg family's foundation, he was also responsible for the creation of two major features of the Garden; the Shoenberg Auditorium in the Ridgway Center and the Shoenberg Fountain at the Garden's south end.

The eleven years during which Mr. Shoenberg served as trustee have been one of the most active and important in the Garden's entire history with the opening of the John S. Lehmann Building, the Anne L. Lehmann Rose Garden, the Japanese Garden and most recently, the Ridgway Center.

The most significant accomplishments of the period, Mr. Shoenberg says, were the successful Capital Fund drive and the increased awareness by St. Louisans and visitors from outside the area that the Garden is an important part of the cultural life of the city.

He emphasized that this last accomplishment can be measured quantitatively in the tremendous rise in the number of members, from 2,400 in 1972, to 16,000 presently. Mr. Shoenberg credits the work of the Executive Board of the Members for this increase. No other botanical garden in the world has a larger membership.

Mr. Shoenberg expresses pleasure in the fact that more and more people are visiting the Garden, becoming members, and looking to it as a significant institution. To quote Mr. Shoenberg: "I know I am working with an organization that is one of the finest of its kind in the entire world."

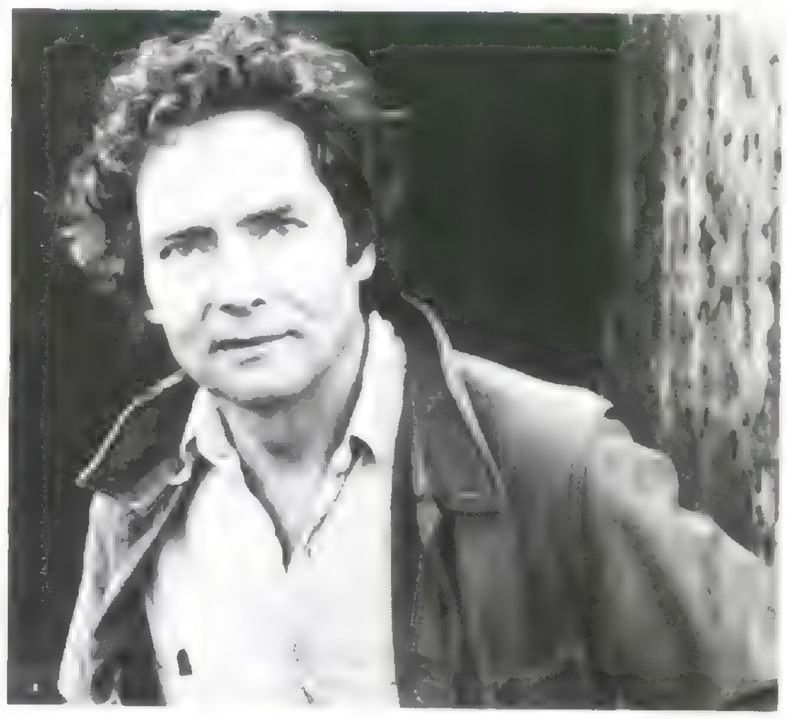
Dr. George Van Schaack



Dr. George Van Schaack, who served as Curator of Grasses and Librarian during a 20-year association with the Garden (from 1948-1968), died recently in Florida. Born in 1903, Dr. Van Schaack was a man of many talents and interests. Although he was first trained in the piano and music theory, he received his Ph.D. in Mathematics from Harvard University in 1935. He developed his interest in botany, and especially in grasses, while he was stationed in the Aleutian Islands during World War II. After the war, he accepted an appointment to teach Mathematics at Washington University, St. Louis. There he met Dr. Edger Anderson (a botanist at the Garden for almost 40 years, and Garden Director from 1954-1957) who persuaded him to join the Garden's staff.



One of the Garden's most popular flower exhibits of the year, the ***Fall Flower Show****, opens on November 5 and continues until November 27. A special, Members'-only preview will be held on Friday, November 4. See invitation at center of the* ***Bulletin*** *for details.*



W. S. Merwin

Two of America's most important contemporary writers will present readings from their works at the Garden in October and November as part of the River Styx P.M. series that returns to the Shoenberg Auditorium for the second consecutive year.

On October 28, at 8:00 p.m., **W. S. Merwin** will read from his poetry. **Ann Beattie** will read from her fiction on Sunday, November 15.

Merwin has received both the prestigious Pulitzer Prize and National Book Award for his poetry. Beattie, who has been honored by the American Academy and Institute of Arts and Letters, is the author of two critically acclaimed novels and three collections of short stories, most of which originally appeared in *The New Yorker.*

Admission is $5 in advance; $6 at the door. Garden Members receive a 10% discount. For information, contact Big River Association at 7420 Cornell, St. Louis, MO 63130. Advance tickets are available at Paul's Books and Left Bank Books.

Meet Our Commissioners



Robert M Sunnen



Sandra Hasser Bennett

On April 5, 1983, voters in the City and County of St. Louis approved a measure creating a Botanical Garden Subdistrict of the eleven-year-old Zoo-Museum District. Through the Subdistrict the Missouri Botanical Garden will benefit from a property tax of up to 4¢ per $100 assessed valuation, providing the Garden with a stable financial base for operation. In the next several issues, we will offer our readers an opportunity to meet the ten commissioners who will govern the Subdistrict. Five of the commissioners were appointed by the Mayor of the City of St. Louis, Vincent C. Schoemehl; five were appointed by St. Louis County Executive, Gene McNary. **Robert M. Sunnen** (appointed by County Executive Gene McNary) is a native of St. Louis and a graduate of Washington University. His business career has been divided between several real estate development companies which he co-founded, and his current position of Chairman of the Board and President of Sunnen Products Company. He is also Chairman of The Sunnen Foundation, which has supported a number of special projects at the Missouri Botanical Garden.

Mr. Sunnen is a former Director of American Association of Industrial Development and served as its Chairman in 1978. He has also served on the Boards of several charities, including the YMCA, Planned Parenthood of St. Louis, and the National Board of Americans United.

Sandra Hasser Bennett (appointed by Mayor Schoemehl), a native St. Louisan, has been visiting the Missouri Botanical Garden since her childhood. She particularly enjoys the Japanese Garden, and feels it provides an environment which encourages introspection and a contemplation of man's place in the universe much like the formal gardens she visited while in Japan some years ago.

Mrs. Bennett has a Bachelor of Arts Degree from Webster College, and was elected to the 1982 Edition of Who's Who Among Students in American Colleges and Universities. She is employed by Monsanto Company as a Local Government Affairs Assistant.

In 1979, she served on the Lindenwood Community School Board, and taught genealogy there last semester. She is currently involved in various civic and community activities, including a new project to develop methods of preserving old St. Louis records now held by the Recorder of Deeds. Mrs. Bennett also serves on the Advisory Committee for a National Center for Urban Ethnic Affairs study.

She and her husband, Harry, have three teenage sons and live in the Lindenwood area of the City.

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Music in the Garden

Music at Ridgway, four concerts by the St. Louis Chamber Chorus, will be presented this year in the Garden's Shoenberg Auditorium. The first concert, October 2, at 3 p.m., will feature works for chorus and solo guitar by Spanish composers; Michael Newman, who has gained critical acclaim for his performances at Carnegie Hall and at numerous universities in North America, will be the guest soloist. The second concert, November 6, also at 3 p.m., will present settings of Old Testament texts by 20th Century composers, including Daniel Pinkham, Alberto Ginastera, Ross Lee Finney, and Leonard Bernstein. A concert in March will offer the St. Louis premier of Frank Martin's *Le Vin Herbe.* The final program of the season, in April, will feature works by J. S. Bach and Haydn.

Individual tickets for performances are $5 at the door. A subscription to all four concerts is $15; information may be obtained by contacting the Chamber Chorus at 721-7212, or by writing to them at P.O. Box 3045, St. Louis, MO 63130. . . . . .



Michael Newman

The Kurosawa Koto Ensemble will present a program of koto music on Monday, October 10 at 8:00 p.m. in the Shoenberg Auditorium. Sponsored by the Japan America Society of St. Louis, the Asian Art Society of Washington University, and the Missouri Botanical Garden, the performance is part of a national tour. Admission is $5 for non-Members, $4 for Members. Tickets will be available at the door; further information may be obtained by calling 342-2120. . . . . .



Kurosawa Koto Ensemble



A. Timon Primm III (left) received the Feinstone Environmental Award for his conservation efforts in the state of Missouri earlier this year. The award is given annually to five outstanding environmentalists in the United States. Mr. Primm, a Trustee Emeritus of the Garden, is retired Senior Vice President of the Pulitzer Publishing Company. As a Member of the Garden's Board, he was extremely involved in the expansion of Shaw Arboretum. He has also been involved in conservation activities related to Buford Mountain; Clarksville Island, a wintering site north of St. Louis for Bald Eagles; and four state parks. . . . . .



Jean O'Neill, wife of Terence O'Neill who served as Prime Minister of Northern Ireland from 1963-1969, will present a lecture, *"The American Garden" in an English Setting* in the Shoenberg Auditorium on October 27 at 10:30 a.m. and 7:30 p.m. Lady O'Neill is a writer and lecturer on the subject of garden history and is currently Vice President of the Garden History Society. She is also actively involved in the Hampshire Gardens Trust, a newly-formed conservation body founded to advise on the conservation of gardens, especially those of outstanding historical and botanical interest in Great Britain. . . . . .

Lecture Series: Plants of the Future

From ancient soothsayers to Nostradamus, from Jules Verne to Isaac Asimov, from Melies' *Trip to the Moon* to Lucas' *Star Wars,* man has been fascinated with knowing about the future. This fall, the Missouri Botanical Garden provides a glimpse into our future, specifically as it relates to gardening and horticulture, with a series of five lectures. All are held in the Shoenberg Auditorium and, as in the past, will occur at 10:30 a.m., and 8 p.m. on each date. Members are invited to bring guests.

October 12: *21st Century Roses:* Garden Rosarian David Vismara.

October 19: *Trees that Merit Attention:* A film produced by the Garden Clubs of America, and introduced with comments by Chairman of Horticulture, Alan Godlewski.

October 26: *Futuristic Gardening:* Public Horticulture Specialist, Steven A. Frowine.

November 2: *Science Fiction Come True: Plant Genetic Engineering,* Monsanto Research Specialist, Dr. Robert Fraley.

November 9: *Amazing and Wonderful: Test Tube Orchids,* Oak Hill Nursery Orchid Hybridizing Specialist, Herman Pigors.

Fall Film Series

Five of the most fascinating films ever produced about the tropics will be shown in the Garden's Shoenberg Auditorium during October. Each film will be shown twice, at 10:30 a.m. and at 7:30 p.m.

October 6: *Korup*, introduced by Dr. J. S. Gartlan, University of Wisconsin, who was scientific advisor to the film. It deals with the proposed Korup National Park in Cameroon, and includes scenes of many primates never before filmed.

October 13: *Cry of the Muriqui*, introduced by one of the World Wildlife Fund Advisors to the film. It concentrates on the endangered primates of southeastern Brazil and the equally endangered Atlantic forest habitat.

October 20: *Island of the Moon*, introduced by Dr. Robert Sussman of Washington University. The film concerns the problems of conservation of natural habitats in Madagascar (see a related story on page 5).

October 24: *Forest in the Clouds*, introduced by Garden Director Peter H. Raven. It shows the biological diversity and threatened status of a Costa Rican rainforest.

October 31: *Baobob: Portrait of a Tree*, introduced by Garden botanist Dr. Robert McGill. The film is a close-up look at Africa's legendary upside-down tree and the interdependence of life in and around it.

All Garden Members are invited to attend the series. Admission is free; there will be an opportunity for questions and answers following each film. . . . . .



The Garden's Holiday Preview Sale, one of St. Louis' most popular early holiday sales for many years, will be held on November 8 and 9 in the Garden Gate Shop, Ridgway Center. Members are invited to take advantage of 20% savings on some spectacular, unusual, and unique gifts, including china, books, prints, and other merchandise appropriate for the season. The hours of the sale are 9 a.m.-8 p.m. . . . . .

Watch for the Garden's magnificent 125th anniversary calendar for 1984. . . . . .



Randall D. Barron (right), Vice-President—Missouri of the Southwestern Bell Telephone Co., recently presented Peter H. Raven, Director of the Missouri Botanical Garden, a $55,000 check to help fund the completion of the Ridgway Center, the Garden's new gateway and visitor center. "The Southwestern Bell Telephone Co.'s tremendous generosity not only enables us to take a step closer to completing the Ridgway Center but also represents this company's strong commitment to community development," said Raven. This marks the second substantial contribution from the Southwestern Bell Telephone Co. towards finishing touches for the new facility. . . . .



Shalom Israel: Israeli Festival

On October 16 through 20 the Missouri Botanical Garden will be host to an Israeli Festival entitled Shalom Israel. The festival will feature exhibits of Israeli crafts, art, photography, as well as an exhibit entitled "Children of the World Paint Jerusalem." The Israeli festival will also feature an audio-visual presentation on Israel, entitled "Another Israel."

"Another Israel" tells a story of Israel in breathtaking panoramas of the land—its green plains, barren desert, olive clothed hills.

The Israel festival will also feature performances of Israel music in addition to lectures and traditional food.

(at left) ***Alley in Jerusalem*** *(1959), woodcut by Jakob Pins. One of almost 70 prints to be included in "Jerusalem and the Israeli Printmaker," part of the Israeli Festival.*

Fall Festival Features Crafts

Be sure and come to the second annual Fall Festival, October 8 and 9, in the Ridgway Center. Last year's festival was one of the most popular activities of the autumn. This year's festival includes story-telling as well as a number of crafts. There will be porcelain sketches, paper marbling, jewelry, pottery, quilts, wooden toys, needlepoint. There will also be a number of gifts and decorations suitable for the winter holidays.



The Garden has a new sculpture. Gox #8 by renowned St. Louis sculptor Ernest Trova (shown here with his work) was installed recently at the southeast corner of the John S. Lehmann building. The sculpture is on loan from Laumeier Sculpture Park. At the reception honoring the installation of *Gox #8* Garden Director Peter H. Raven noted that this loan from Laumeier marked the continuation of the excellent cooperation among St. Louis Cultural Institutions. Ernest Trova is respected throughout the world as one of the premier sculptors of our time. His best known works are those in his *Falling Man* series. . . . . .



The Garden was recently privileged to host the first major St. Louis exhibit of the work of the late sculptor, Alexander Calder (1898-1976). A joint effort of the Garden with the Greenberg Gallery of St. Louis, the exhibit—titled ***Calder in Retrospect****—was greeted enthusiastically by visitors and attracted much attention from art lovers and critics alike.*

Join Us! Tour to Exotic Old World Tropics

January 18–February 6, 1984

The members' tour to the Far East will be a unique opportunity for you to see the plants and people of Thailand, Singapore, Hongkong, Philippines, and Indonesia. In addition to experiencing the mysterious and intriguing cultures and art of these countries, you will have the opportunity to visit tropical plant nurseries, private gardens, botanical gardens, and orchid farms which are rarely seen by tourists. If you do not already have our tour brochure, call the membership office at 577-5120 for a copy. Space for this tour is limited, so please make your reservation as soon as possible.

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July-August, 1983

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(continued on page 15)

Let's Grow Lilies . . . the second annual lily bulb sale by the Mid-America Regional Lily Society, will be held in the Floral Display Hall, Ridgway Center, on October 22-23. Several hundred bulbs representing many different varieties will be available. Hours of the sale are 11 a.m. to 4:30 p.m. on Saturday, October 22, and 9 a.m.-4:30 p.m. on Sunday, the 23rd. Call 434-2109 for information. . . .

Aside from the January/February tour of the Far East noted at left, the Garden has planned two other trips for its Members. In March, 1984, Jane Coultas (Manager of the Garden's historic Tower Grove House) will lead a tour to Williamsburg and Alexandria. In May, Chairman of Horticulture, Alan Godlewski, will take Members to Italy. Members should watch the mail for further details.

. . . . . .

Increased Support

(continued from page 14)

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Rain At the Japanese Garden



The waterfall is there,
screened until its point of view,
and revealed in a moment difficult to believe,
as if in that glimpse to make you aware
its pouring is real, not you.
    But if this is true, why
is the satin lining yours alone
when you wear the pond—and its garden—like a sleeve?
The riddle ripples a pewter sky
which answers with a koan:
    a master sits, head bowed,
and say a tycoon, on the same bench;
wheels and deals and the lack that is achieved.
How is each denying, under a cloud,
he's anything rain can quench?
    We ran before it broke,
not as accepting as a well,
nor bribing one for an indefinite reprieve.
Clumping, under a see-through coat,
we drank the swim as it fell.

—John S. Harris

John S. Harris has published his poetry in several literary journals and has received many awards for his work. He is presently President of St. Louis Poetry Center. "Rain at the Japanese Garden" originally appeared in Webster Review.

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SECOND CLASS
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AT ST. LOUIS, MO.

Missouri Botanical Garden Bulletin

Volume LXXI, Number 7
December 1983

Rose Garden of the Year

The Anne L. Lehmann Rose Garden, for several years one of the Missouri Botanical Garden's most popular features, was cited this autumn with the All-America Rose Selections 1983 Public Rose Garden Award. This award is made, once a year, to an outstanding United States rose garden if there is one that the judges consider worthy of the significant honor.

Displaying more than 4,000 roses, the Lehmann Rose Garden was dedicated in 1976 and is named for Anne L. Lehmann who, with her late husband John S. Lehmann, has been one of the Garden's most ardent supporters during the last four decades.

Mr. and Mrs. Lehmann's support has made possible several significant developments at The Garden in addition to the rose garden, including the Gardenview Restaurant and the John S. Lehmann Building, now center for the world's most active botany programs. Mr. Lehmann was president of the Trustees from 1953 to 1957. Both of the Lehmanns shared a love of roses.

The presentation was made during the recent national convention of the American Rose Society, held at the Missouri Botantical Garden on September 18-21. The judges cited the rose garden for its outstanding design and called attention to the care and quality of cultivation by the Garden's horticulturists and its Rosarian, David Vismara, as well as Vismara's predecessor as Rosarian, Alfred Saxdal, who has been a volunteer at the Garden, with his wife, since his retirement.



Accepting the Public Rose Garden Award from the A.A.R.S. is Garden Board President, C. C. Johnson Spink, right.



The Gazebo in the Lehmann Rose Garden.

Inside

You say the winter months stretch before you as only so much grey and snowy time to be gotten through until the spring thaw? Cheer up; the Missouri Botanical Garden has so much to do that winter will seem to fly by: A Victorian holiday; the holiday plant exhibit; the holiday plant sale; the spectacular orchid show not too far off; films. You could visit the tropics (in the Climatron) or the desert (in the Desert House); you could spend a leisurely hour or so in the Spink Gallery marvelling at the life-like porcelain sculpture there. To begin, why not take a look at what's inside this *Bulletin*, and then make this a winter to enjoy.

Comment



This has been an eventful year for the Garden. The principal achievement for 1983 was, of course, the creation of the botanical garden subdistrict of the Zoo-Museum District which will allow us to continue to provide the high quality of services that the St. Louis community has come to expect from us. But so much more happened this year as well, from the continued growth of our educational and scientific programs and the development of the Garden throughout our 79 acres. All of the accomplishments of 1983 we the result of the diligence and commitment of thousands of i dividuals, from our Members—the number of which reached new high—to our staff and volunteers, to our trustees, and to th voters of St. Louis who expressed their regard for us by creatin the subdistrict. To each and every one of these individuals, I wa to express heartfelt appreciation.

Peter H. Raven

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Postmaster: send address changes to P.O. Box 299, St. Louis, MO 63166.

Gardening in St. Louis

Choosing a Christmas Tree

Choosing the family Christmas tree is great fun, but can be a quite confusing job. There are so many choices!

Everybody has their own favorite type of tree. I prefer the Canadian balsam since it has soft needles, attractive color, and a pleasant fragrance. Another fir, the Douglas fir, is also a beautiful tree, but tends to be more expensive. Scotch pine is probably the most popular Christmas tree sold. It is economically priced, holds its needles well, but does not have a very strong fragrance. Unfortunately, Scotch pine, like the spruces, have sharp, stiff needles which, when they fall into your carpeting can provide a very painful experience for children and adults walking around the tree in stockinged or bare feet. After stepping on a few of these needles myself, I decided I preferred the "friendlier" fir trees.

Cornell University has provided some helpful information in choosing trees. The chart below characterizes the various types of trees by their needle holding ability, their branch firmness, and their fragrance.

No matter which type of tree you purchase, it is important it be fresh. Ask the dealer when the trees were cut. Try to buy one cut within the last month. Brush the tree limbs; the needles should be supple, not stiff and dry, and should not fall off. Needle color is also a good indicator for freshness. The needles should have a bright, clear-green, not dull grayish-green color.

Cornell has some valuable suggestions to help guard against carpet stains from water spills from your tree holder and pitch from the tree. As you set up a tree, pick up falling needles. Needles allowed to remain on the carpet may exude pitch that will cause stains. If pitch gets on the carpet, apply a commercial spot-removing solvent or turpentine. Do not use carbon tetrachloride, gasoline, or lighter fluid. Use a small amount of the solvent on a cloth because an excessive amount can damage the backing of the rug, particularly if it is latex. Then blot with clean white toweling or cloths. Repeat if necessary. Try the cleaner on a small, inconspicuous area of the carpet first to be sure that no color change occurs.

As you add water to the tree holder, check carefully for spills and any "sweating" from the container. Blot spills immediately with paper towels. Place a thick padding of paper towels over any wet area and weight it down in order to allow the moisture to wick up into the toweling without stopping at the rug surface where it might deposit staining material soaked up from the backing.

Fire Resistant Treatment for Christmas Trees

A dried tree is a fire hazard. By treating your tree properly you can prevent it from drying out excessively and becoming a danger. These recommendations are from the Indiana State Fire Marshal's office.

Ammonium Sulphate
(fertilizer grade) . . . 1 cupful (8 oz.) for each pint water
Water . . . . . 1 pint for each 2 lbs. of tree

Directions: Make fresh cut across trunk of tree so that chemical will contact fresh wood. Weigh tree and use 1 pint of water for each 2 lbs. of tree. Make a solution by dissolving one cupful of ammonium sulphate for each pint of water used. Put solution in pan, set tree in upright position in solution, and place in a cool area for five days.

The degree of fire resistance depends upon the amount of solution absorbed. Freshly cut trees will absorb the solution most readily. Fertilizer grade ammonium sulphate can be obtained at most seed, hardware, or farmers' supply stores.

Other Safety Pointers

- Keep the tree away from fireplaces, radiators, TV sets, and anything else that could dry the needles.
- Keep candles away from the tree and use fireproof decorations and light reflectors. Do not let tinsel touch the light sockets.
- Check all Christmas tree lights for loose connections or bare wires before use. Any set of lights with brittle, cracked insulation should be replaced rather than patched.
- Plug in all sets of lights to detect burned out bulbs and short circuits before putting them on the tree.
- Purchase only sets of Christmas tree lights that are wired in parallel and bear the approved label of Underwriters' Laboratories.
- Do not overload electrical circuits. For a typical home tree with 36 bulbs, you are adding 250 watts to the circuit. A 15-amp fuse is capable of handling a total of 1,500 watts. If a fuse blows, it means that the line is overloaded or attached to defective equipment. Do not replace with a larger fuse.
- Unplug lights when leaving the room, even for 10 minutes.

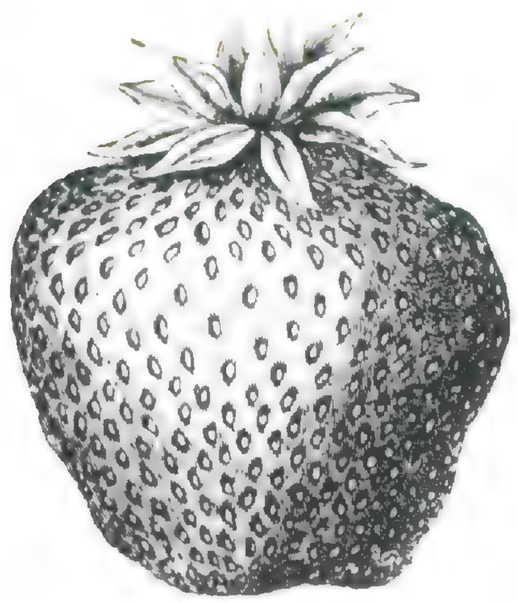
—Steven A. Frowine, Public Horticulture Specialist

Characteristics of Common Christmas Trees Under Room Conditions*

	Fir		*Pine*				*Spruce*		
	Douglas	*Balsam*	*Austrian*	*Red*	*Scotch*	*White*	*White*	*Norway*	*Blue*
Needle Holding (without water)	2	2	1	1	1	1	3	5	2
Needle Holding (with water)	1	1	1	1	1	1	2	4	1
Firmness of branches	4	3	1	2	1	4	2	3	1
Fragrance	1	1	3	3	3	2	5	3	3

*1 = excellent; 2 = very good; 3 = good; 4 = fair; 5 = poor.

Suggestions for Home Garden Center Received



One of the most important and exciting projects ever undertaken by the Garden is the Home Garden Center, currently in the planning stages. Several months ago, in a column in this *Bulletin*, the Garden's Director, Peter Raven, solicited suggestions from readers for the design and direction of the Center. Many Members have responded, some at length, with their ideas for the Center.

A frequent comment in the responses has been that the present Demonstration Vegetable Garden, located just north of the Japanese Garden, is an excellent feature and that it or a similar garden should be maintained when the Home Garden Center is created. Other suggestions are for displays concerning common problems faced by home gardeners, including growing plants in shade; the use of fertilizers and pest controls; composting; long term seed storage; the integration of flowers and vegetables in very small garden areas; and new watering methods. Some Members have asked for displays giving information on new developments in vegetables, different types of soils, the relative nutrition of different vegetables, and organizations helpful to home gardeners.

Members are still encouraged to send their ideas and suggestions for the Home Garden Center to the Missouri Botanical Garden; they may be addressed to Home Garden Center, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166.

The planning of the Home Garden Center is possible through the generosity of Dr. Walter L. and Dorothy Mahaffey Moore.



Shovel, Hoe, Radio

The Garden's Public Horticulture Specialist, Steven A. Frowine, continues his series of helpful radio programs as a guest on KMOX *At Your Service* during December. On Monday, December 5, from 3 to 4 p.m. he'll discuss Christmas tree and greens selection and care. From 9 to 10 p.m. on Sunday, December 18, he'll continue that discussion. KMOX is 1120 AM.

Beginning in January, 1984, Supporting Members will no longer receive *Garden* magazine.

The Building Committee

In the past decade if anything about the Garden has been evident it is the development and construction of new features, from the John S. Lehmann Building to the Japanese Garden to the Ridgway Center and the related development of the Garden's north end. A building program so wide-ranging and progressive requires careful management and planning. An important role in this is played by the five members of the Building and Grounds Committee of the Garden's Board of Trustees. According to Louis S. Sachs, who serves as Chairman of the Committee in addition to his position as Second Vice President of the Board, the role of the building committee is to supervise construction work on behalf of the Trustees and to make certain that the work meets the rigid requirements established by the Garden's Board and staff members. "Every aspect of the Garden has to be appealing because of the nature of the institution as a showplace. Each building and garden needs to be an example of the highest quality of its kind. The Garden is a world-leading institution and visitors expect that everything will be world class," he says. "Our role is to make certain that it is."

Pat Rich, Special Assistant to the Director and the staff member who coordinates construction projects at the Garden, says, "We're fortunate to have the five people we do as members of the committee. They have brought so much expertise and insight to the building program at the Garden that I can say the fine results are a direct result of their advice, suggestions and support. I can also say, without a moment's hesitation, that without Louis Sachs and the rest of the committee, the Garden would not be as outstanding a visitor attraction as it is today."

In addition to Mr. Sachs, the committee includes Jules D. Campbell, Marion K. Piper, Lucianna Gladney Ross, and Harry E. Wuertenbaecher, Jr.

(Next issue, the Finance Committee will be featured.)

The Holidays at the Garden

What characterizes the December holidays? Music, food, close friends, good cheer. There'll be all of these and more at the Missouri Botanical Garden during December.

The Garden will be open 9:00 a.m. until 4:30 p.m. every day except for Christmas, the only day of the year the Garden is closed.

Tower Grove House

The charm of the Victorian holidays returns to the Missouri Botanical Garden once again this December, when visitors will have the chance to experience a Christmas like the ones Charles Dickens knew and wrote of. Henry Shaw's country home, *Tower Grove House*, is one of the finest examples of restored Victorian mansions anywhere and during December, it acquires even greater charm when it's decorated after the fashion of a Victorian Christmas. Beginning on December 6, it'll be complete with yule logs, evergreen ropes and wreaths, and a Christmas tree with antique ornaments. The house will be replete with the scents we all remember from our childhood: cinnamon, nutmeg, mace, and the unmistakeable Christmas scent of natural evergreens.

A candlelight tour is scheduled in the house for Wednesday, December 7, from 4:30-6:30. There'll even be some traditional holiday refreshments served in the Tea Room. Reservations for the candlelight tour are limited and should be made early by writing, and sending a check for $3 per person, to Tower Grove House, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166.

Special Christmas luncheons will also be served in Tower Grove House Tea Room on Tuesday through Thursday, December 13-15. Reservations are limited and can be made in parties of four or six only. Please call 577-5150 for reservations; the cost is $6.00 per person.

Music

Music is as much a part of the Christmas season as is anything, and there is no exception in the Garden's Holiday activities. Three separate concerts are scheduled for the Shoenberg Auditorium. On December 4 at 2 p.m., the Madrigal Singers from Webster Groves Christian Church will perform. On December 11 at 2 p.m. Webster Garden's Ringers will present a concert of music for bells. And on December 17, also at 2 p.m., "Gospel Unlimited" will perform. For further information on these and any other events, contact the Garden's Public Relations Department at 577-5125.

"My best of wishes for your merry Christmases and your happy New Years, your long lives and your true prosperities. Remember! Here's a final prescription added, 'To be taken for life.'"
—Charles Dickens

Trees & Cards

Many of our Christmas traditions came to us from the Victorian age. Most notable among these, of course, is the Christmas tree. (Although the origin of the Christmas tree is earlier in history by some 300 years and most often attributed to the theologian Martin Luther, it was during the reign of Victoria that it came to common use.) Another of these traditions is the exchange of Christmas cards; as a mark of the popularity of the tradition, consider that each year more than 3 billion Christmas cards are sent in the United States alone.

The custom originated with a Londoner, Henry Cole, in 1843, who commissioned an artist to design a card for him to send to his friends.

This year, as part of its Holiday celebrations, the Garden will offer an exhibit of antique Christmas cards from the Hallmark Historical Collection. Many of the fifty cards included in the exhibit are more than a century old. The exhibit opens December 3 and runs through January 1.

Plant Exhibit

The annual Holiday Plant Exhibit opens to the public on Saturday December 10 and continues through January 2. Featuring plants traditionally associated with Christmas, the exhibit includes poinsettias, cyclamen, white chrysanthemums, and Christmas cactus; it will be held in the Floral Display Hall. The trees in the Monsanto Hall will be decorated with small, white lights. There will also be a Christmas tree in the center of the Latzer Fountain outside the Ridgway Center.

Art Show

A Holiday Art Show, featuring the work of 40 professional artists and craftsmen from the St. Louis County Art Association, will be featured in the Ridgway Center on December 17 and 18. Works exhibited and for sale include water colors, oil paintings, pottery, woodwork, photographs, silk screens, and sculpture. Hours of the show are 9 a.m. until 4:30 p.m.

Special Receptions

Members of the Garden are invited to two special holiday receptions. On Friday, December 9, there will be a preview of the Holiday Plant Show from 5:30 to 7:30 p.m. in the Ridgway Center. Following the preview, it's Friday Night at the Movies, Garden-style, when members are invited to a special screening of the beloved Christmas classic, *Miracle on 34th Street*, starring Edmund Gwenn in his Academy Award winning role of Kris Kringle. The film is in the Shoenberg Auditorium at 7:30 p.m. On Saturday, it's Family Day, from 10 a.m. until 3 p.m. The famous Bob Kramer Marionettes present a "Holiday Review" at 10 in the morning. At 11, there will be a Holiday Cartoon Series featuring Pluto, Bugs Bunny, and Woody Woodpecker. From 11:45 until 1, Members are invited to visit the Holiday Plant Exhibit or to purchase a special Holiday Lunch in the Gardenview Restaurant. Then at 1 p.m. there is a showing of the movie, *Hans Christian Anderson.*

The Colors of 1984

The New Missouri Botanical Garden Calendar



One of the most stunning calendars for 1984 available anywhere is the Missouri Botanical Garden Calendar. It features 33 color photographs by Jack Jennings, whose work also appeared in the 1982 and 1983 Calendars (see article this page). Thirteen of the pictures are a full 12 x 16½ and are suitable for framing. In addition to the stunning photography, the calendar is packed with historical notes in honor of the Garden's 125th anniversary that will be celebrated during the year.

Missouri Botanical Garden Calendar 1984 can be an ideal gift for relatives, friends, and even out of town acquaintances and family who have heard of the Missouri Botanical Garden but have limited opportunity to see what is America's oldest and finest botanical garden. Even if they are 2,000 miles away, they can still enjoy the Japanese Garden, or the amazing *Victoria* waterlilies, or the restored Victorian home Tower Grove House through the fine photographs.

An order blank appears at right.



☐ **YES, I want to order _____ 1984 Calendars @ $9.95 each** (includes postage) **$_____ total.**

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Monet with a Camera

You could perhaps call Jack Jennings an amateur photographer. But amateur in the sense that he does not make his living as a photographer; that it is his hobby. For if we class him as an amateur, then we must class him as one with the likes of Bobby Jones, the great golfer of the 1920s; Emil Zatopek, the Czechoslovakian runner who electrified the 1952 Olympics; and the 1980 American Olympic Hockey team who surprised the world by taking the gold medal.

When it comes to photographing the Missouri Botanical Garden—from a panorama of the Japanese Garden to an intricate detail of a rose petal—no one is more accomplished than Jack Jennings, whose 33 color photographs are the highlight of the Garden's 1984 Calendar. His work was also featured in the 1982 and 1983 calendars.

Jennings first picked up a camera 25 years ago when his first child was born. At the time he bought a Brownie Hawkeye—a simple camera roughly equivalent to today's popular instamatic—so that he could take snapshots of his children (he now has six) as they grew. He discovered that he enjoyed his new hobby—and more—that he was good at it. In 1966, he invested in a Nikon and started seriously pursuing his avocation. "At the time I was living in New York," he says, "and I started photographing everything I saw—buildings, people, wildlife, plants, even pinball games. I always try to capture the essence of a place in my photographs; since I was working in Manhattan, that was the place I wanted to capture."

In 1978, Jennings returned to his native St. Louis. At the time there was an exhibition of paintings by the great French impressionist, Claude Monet, at The St. Louis Art Museum (*Monet's Years at Giverny*). Jennings attended the exhibit. "Monet's work was magnificent," he says. "I wanted to see if I could do with my camera what he did with his paints."

So he came to the Missouri Botanical Garden to do some work. "I thought I'd spend a little time there, a few months perhaps," he says. But he found that every time he returned to the Garden, it was different. "I found something new to photograph on every visit." So he kept returning and returning. Today, he estimates that he's taken 10,000 photographs at the Garden, in all kinds of weather and through all the seasons.



Jack Jennings in the Japanese Garden

He's come on pleasant and sunny spring days, but also on days there was no sun and everything was dulled by a grey and rainy sky. He's also come on days when no one else was around, in the middle of the raging blizzard. "Once, when I was here, the wind chill was minus fifty." He also comes often on early Saturday mornings, at dawn. "Sometimes it's only me and the ducks in the Japanese Garden," he says.

Aside from the three recent calendars, his work on the Garden has been featured in a slide presentation that Jennings takes to garden clubs and to other groups, an exhibit of photography at the Garden, on postcards and slides that are offered for sale in the Garden Gate Shop, and in the most recent Veiled Prophet Fair Souvenir program.

Jennings is director of communications industry marketing of McDonnell Douglas Automation Company.

He lives with his wife, Michiko, and their young daughter in St. Louis.

Systematics Symposium



With the coordinator of the 30th annual Systematics Symposium, Dr. Gerrit Davidse of the Missouri Botanical Garden (left), are the Symposium's featured speakers: (l to r) Doctors Daniel R. Brooks of the University of British Columbia, Peter Crane of the Field Museum of Natural History, Joel Cracraft of the University of Illinois at Chicago, Donn E. Rosen of the American Museum of Natural History, Vicki A. Funk of the Smithsonian Institution, Edward O. Wiley of the University of Kansas, and Walter M. Fitch of the University of Wisconsin-Madison.

More than 400 scientists from across the United States and from five foreign countries participated in the 30th annual Systematics Symposium sponsored by the Missouri Botanical Garden in October. The subject this year was *The Implications of Phylogenetic Analysis For Comparative Biology*, or cladistics as it is known. Cladistics is a relatively new area of research that rigorously and precisely attempts to analyze evolutionary relationships in plants and in animals. According to Dr. Geritt Davidse, coordinator of the last 12 symposia, it is a method that forces scientists to look at old concepts, such as the origin of flowering plants, in a new way. Dr. Davidse also said that this was one of the first Symposia anywhere in which the talks and discussions moved beyond purely theoretical considerations into practical applications of the research.

The Garden, one of the world's leading botanical research institutions, has held the Symposium every year since 1954 as a forum for the exchange of information and ideas within the scientific community. It has been supported since its first year by the National Science Foundation.

A Fragrant Season

During the holiday season there are many traditional sights and sounds: Christmas trees with colored lights, red and green candles, carolers singing and ringing church bells. There are also traditional smells at Christmas. The fragrance of a freshly cut Christmas tree, turkey roasting in the oven and the spicy smell of Christmas cookies baking scent the house throughout the holidays

This season, add to the fragrances by using spices to make something to give as a gift, to decorate your tree and to eat.

. . . as a Gift: A Christmas Sachet!

Sachets or scent sacks make pretty gifts that smell good, too. Cut a 5 inch square of Christmas fabric with pinking shears for each sachet you plan to make. Lay the fabric wrong side up on a table and fill the center of each square with a mixture of equal parts dried orange or lemon peel, broken stick cinnamon, and cloves. Draw the corners of the fabric together and tie with a red or green ribbon.

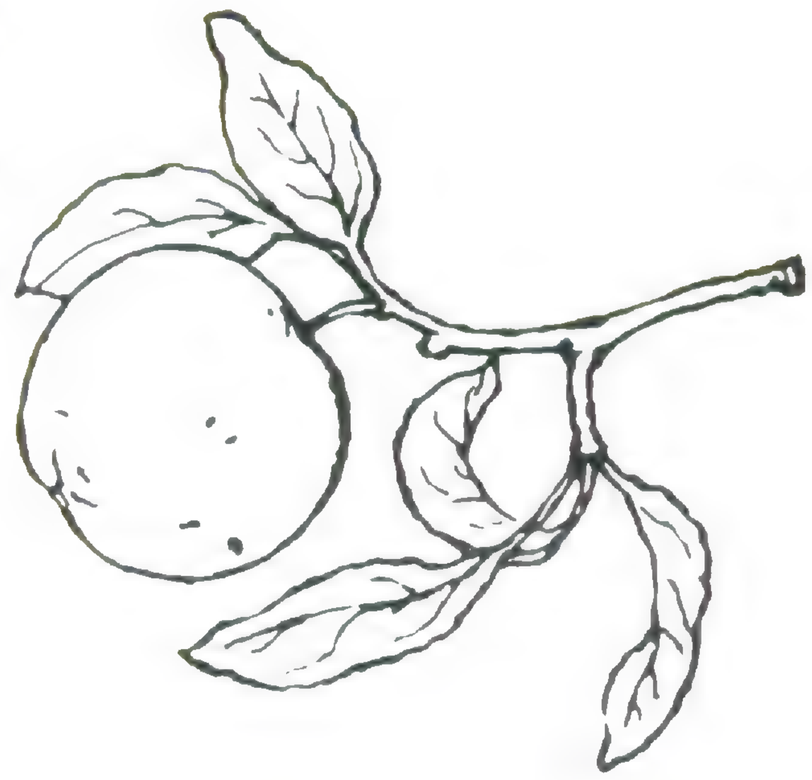
. . . as a Decoration: Cinnamon and Apple Sauce Pomanders

Mix together 2 parts applesauce to 3 parts ground cinnamon. The consistency should be like play-dough, add more cinnamon or apple sauce as needed. Pat the dough out flat on a piece of waxed paper until about ¼ inch thick. Use your favorite cookie cutters to cut out shapes. Use a toothpick to make a hole in the top of each ornament. Place the ornaments on a cookie sheet and dry in the oven at 200 °F.

—Linda Sanford
Education Department

FOR Younger MEMBERS





Apples and Cinnamon— A Holiday Taste Treat

Holiday guests, as well as family members, will savor every bite of a homemade applesauce spiced with cinnamon. Young children can help prepare the applesauce; at the same time, they will be participating in a delightful sensory experience.

You will need: stove, hand-cranked food mill, large bowl, blunt knife, long-handled wooden spoon, measuring cup and spoons, apples (one apple per serving), water, cinnamon, sugar.

What to do: If possible, take your child to the grocery store to select fresh apples. Jonathon apples are a good selection. Rinse the apples and place them, one at a time, on a small cutting board. Help your child to safely use the blunt, plastic knife to cut the apples in half. Talk with your child about the seeds, remove the seeds, and cut the apples into small pieces. Keep the skin on the apples in order to give the applesauce a somewhat rosy color.

Place the apple pieces into a cooking pot. Add enough water to the pot to *partially* cover the apples. As the apples begin to heat, give your child a turn to stir and mash them with the long-handled spoon. Ask such questions as: Do you see smoke; what do we call it (steam)? How does steam feel? What do you smell? What is the heat doing to the apples? Why are there bubbles in the water? Note the change from firm apple pieces to soft, mushy pieces.

When the apples are quite soft, spoon them into the food mill which has been placed over a large bowl. Show your child how to operate the food mill. What is the mill doing to the apples? When all of the cooked apples have been pressed through the mill, you will be ready to add the sugar and cinnamon. Using the measuring cup, add ¼ cup sugar for every eight whole apples used. Measure one tablespoon of cinnamon for every eight whole apples used. Stir the ingredients thoroughly.

You won't go wrong serving this tasty dish. And those who help you eat it should all agree: apples and cinnamon belong together.

—Ilene Follman
Education Consultant

Did You Know . . .

. . . that *cinnamon* comes from the *bark* of a tree?
. . . that *cloves* are *flower buds*?
. . . that *ginger* comes from a *root*?
. . . that *nutmeg* is a *seed*?

CALENDAR

What do you think of when you think of December? Holidays, the warm and sweet smells of sugar cookies, the sharp scent of evergreen on a crisp and bright afternoon after a snow, carolers, best wishes. This year, think, too, of the Missouri Botanical Garden and consider what we have to offer you.



December

DECEMBER 1-10

December 3: **Antique Christmas Card Exhibit**, Ridgway Center, all day (through January 1). Come see the sorts of greetings your grandparents and great grandparents sent their friends and relatives.

December 4: **Madrigal Singers**, Shoenberg Auditorium, 2 p.m. What is Christmas without music? The group is from Webster Groves Christian Church.

December 6: **Victorian Holiday**, Tower Grove House (through December). Turn back the calendar pages a hundred years and roll in the Yule log for an old fashioned Christmas.

December 7: **Candlelight Tour of Tower Grove House**, 4:30-6:30 p.m. This is the way that the early Victorians would have seen the House. There'll even be some traditional holiday refreshments.

December 9: **Holiday Plant Show Preview**, Ridgway Center, 5:30-7:30 p.m. A little holiday cheer and a classic film, *Miracle on 34th Street*, to get you in the spirit of the season.

December 9-10 **Holiday Plant Sale**, Garden Gate Shop, 9:30 a.m.-4:30 p.m.

December 10: **Members' Family Day**, Ridgway Center, 10 a.m. A puppet show, a film, some cartoons, and perhaps a few surprises.

Holiday Plant Show, Floral Display Hall (through January 2). One of our biggest and most popular exhibits of the year.

DECEMBER 11-17

December 11: **Webster Garden's Ringers**, Shoenberg Auditorium, 2 p.m. A concert of holiday music performed on bells.

December 13-15: **Holiday Luncheon**, Tower Grove House. Some traditional holiday cuisine. For information on reservations, see p. 5.

December 17: **Holiday Art Show**, Ridgway Center (also on 12/18). Some arts and crafts that you might want to consider as gifts for those on your list.

Brunch with Santa Claus, Gardenview Restaurant, 10 a.m.-1 p.m. Eat and be merry, but mind your manners; he'll be watching and checking his list. Twice. (Also on 12/18.)

Gospel Unlimited, Shoenberg Auditorium, 2 p.m. A concert of holiday music.

Babes in Toyland, Shoenberg Auditorium, noon. A movie for the children in all of us.

Continues: **Holiday Plant Show**

Victorian Holiday

DECEMBER 18-24

Continues: **Holiday Plant Show**

Victorian Holiday

DECEMBER 25-31

December 25: **Christmas Day**: Missouri Botanical Garden closed.

Continues: **Holiday Plant Show** (through January 2).

Victorian Holiday (through December).

January

JANUARY 1-7

Continues: **Holiday Plant Exhibit** (last day, January 2).

Closed all month: Tower Grove House will be closed during January for maintenance and will reopen in February

JANUARY 8-14

January 11-15: **Science Fiction Festival**, Ridgway Center. Films, lectures, exhibits, and perhaps some very strange creatures.

January 14: **Children's Film**, Shoenberg Auditorium, noon. Title to be announced.

JANUARY 15-21

January 21: **Canterbury Days**, Ridgway Center (also on 1/22). Come to the days of knights and fair maidens, when you could tell a man's character by the color of his armour.

JANUARY 22-31

January 27: **Orchid Show Preview**, Ridgway Center. Details will be announced.

January 28: **1984 Orchid Show**, Floral Display Hall. Visit one of the finest collections of orchids anywhere in the U.S.

Coming in February: We'll offer a special program for the centennial of the death of George Engelmann (1809-1884), Henry Shaw's principal advisor; films; a quilt exhibit; and of course, the orchid show continues.

Profiles in Service

Warren Shapleigh: 25 Years of Service



Twenty-five years ago, Dwight Eisenhower was President of the U.S., and the flag had but 48 stars; Alan Shephard had not made his pioneering space flight and the first jet air line in the U.S. began a run between Miami and New York. Most everyone was reading the number one best seller, *Doctor Zhivago*. In St. Louis, the country's oldest botanical garden was on the threshhold of its centennial year.

The same year, Warren McKinley Shapleigh joined the Board of Trustees of that century-old garden; for the past quarter-century he has served enthusiastically as a member of that Board. During the entire 125 year history of the Missouri Botanical Garden, only eight men have been active trustees for as long or longer than Warren Shapleigh (see box).

He has seen, in that time, and been an important part of, the most active period of development in the Garden's existence. Since 1958, the Climatron was built; as were the John S. Lehmann Building, the Anne L. Lehmann Rose Garden, the English Woodland Garden, the Japanese Garden, and the Ridgway Center. The education program has grown enormously and the Garden's research program has become one of the most significant botanical programs anywhere in the world. "Today the Garden is providing greater service to the community than at any other time in its history," he said. But of all of these developments, he cited the recent creation of the Botanical Garden Subdistrict in the Zoo Museum Tax District as the most significant single accomplishment. "The revenue from the tax district provides a comfortable base for the Garden's financial future. Without it, maintaining the facilities and providing the number and the quality of services that the community has come to expect would be impossible," he said.

It was the Garden's reputation and potential for service that piqued his interest in becoming a trustee in the late 1950s. But his decision finally resulted from his feeling that his background and abilities would enhance the Garden's operations. "I've always felt that the Garden was a great asset to the community. I joined the Trustees because at the time and just by circumstances I was able to make a contribution to the institution," he said.

As for what he enjoys most about his work as a trustee, he pointed to the high calibre of individuals who are and have been trustees during his tenure. He also said, "I've especially enjoyed working on the financial aspects of the Garden's operation; I've liked seeing that the results of our financial management have been very, very good." For a number of years, he served as chairman of the Board's Finance Committee, and he still is a member of that committee, as well as the Executive, Future Planning, and Nominating committees.

Mr. Shapleigh is retired President of the Ralston Purina Company of St. Louis and a graduate of Yale University. He has served on the Boards of Ralston Purina, Missouri Pacific Railroad, Morgan Guaranty Trust Co. of New York, Brown Group, Inc., and First National Bank, St. Louis. He also has been a Board Member of the St. Louis Regional Commerce and Growth Association, the Brookings Institution, Washington University, and the Jefferson National Expansion Memorial Association.

TRUSTEES WITH 25 YEARS OR MORE ACTIVE SERVICE

Trustees	Years Active Service	Dates Active Service
George Hitchcock	44	1903-1947
William H. H. Pettus	33	1889-1922
Daniel Catlin	28	1926-1964
Leonard Matthews	28	1895-1923
John Shepley	28	1901-1929
Henry Hitchcock	27	1947-1974
Edward Eliot	25	1903-1928
George Moore	25	1929-1954
Warren Shapleigh	**25**	**1958-**

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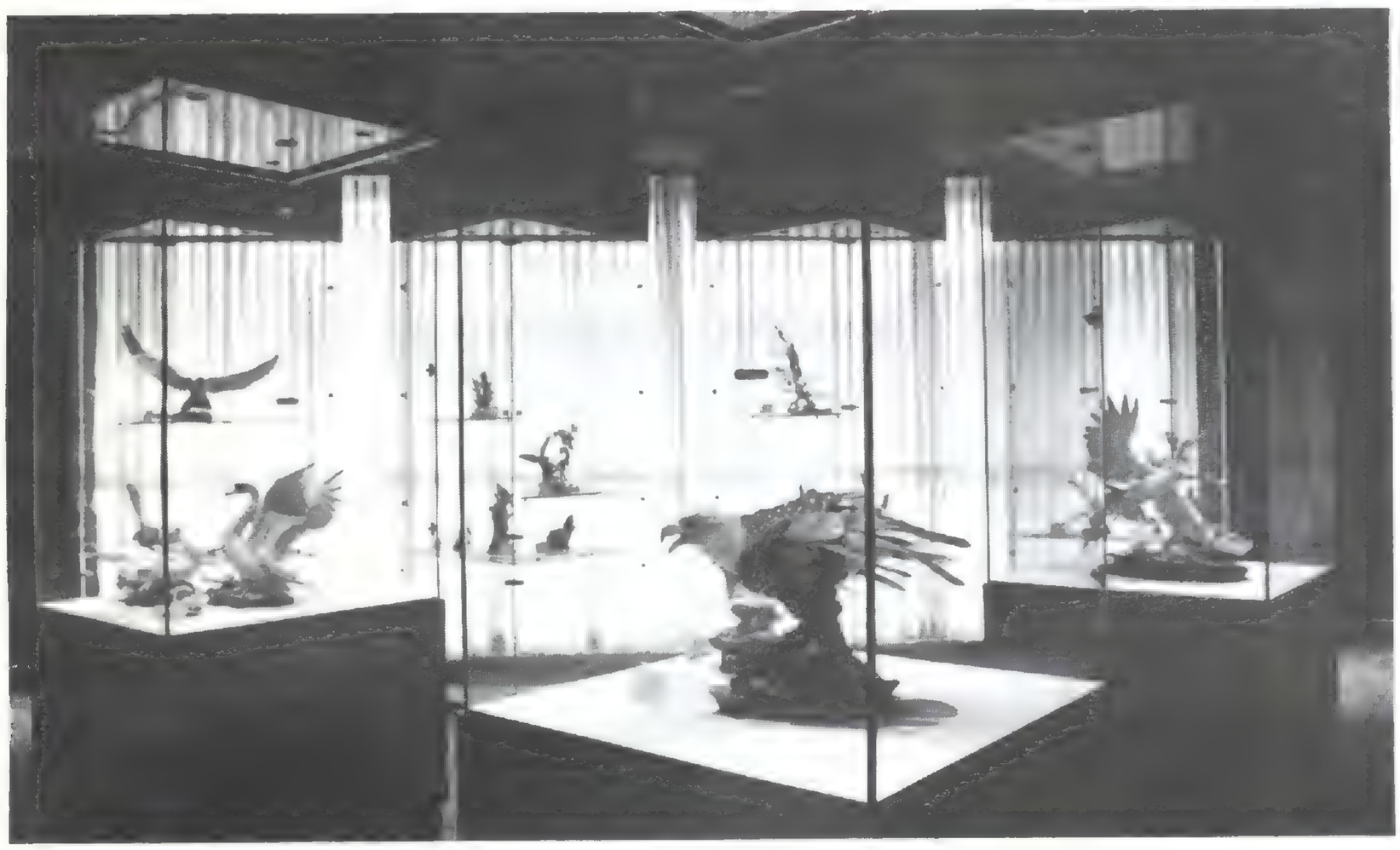
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Mrs. Rudyard Rapp, *First Vice-President*
Mrs. Pedrick Conway, *Second Vice-President*
Mrs. Bruce R. Yoder, *Secretary*
Mrs. Charles Cook, *Treasurer*

The Tribute Fund of the Missouri Botanical Garden is an excellent way to recognize the special people and events in your life. Contributions have been made by Members in the past to honor their friends or relatives on their birthdays, anniversaries, graduations. Contributions have also been made in memory of parents, grandparents, and other relatives. For information about the Tribute Fund, contact the Development Office at 577-5120.

Spink Gallery—Wonder in Porcelain

One of the most stunning collections of porcelain sculpture anywhere is exhibited in the Spink Gallery of the Ridgway Center. Featuring work by the great Edward Marshall Boehm and the Boehm Studios, the gallery is open from 10 a.m. until 4:30 p.m. daily. Why not take a Saturday or Sunday afternoon, come to the Garden for lunch or brunch, and spend some time in the gallery?







Tower Grove House Cook Book Reissued



In celebration of the 125th anniversary of the founding of the Missouri Botanical Garden, the *Shaw House Cook Book*, originally published in 1963, has been reprinted. The book contains hundreds of choice recipes from a Golden Era of St. Louis living as well as amusing anecdotes of Henry Shaw's time. The new edition will have a new cover and new pictures and will be available in time for Christmas giving. Call Tower Grove House, 577-5150, for information. To whet your appetite (literally) we give you two recipes from the book which are particularly appropriate for the season.

From the Shaw House Cook Book

English Plum Pudding

½ lb. fine bread crumbs
1 lb. brown sugar
2 cups sweet milk
1 lb. beef suet, chopped fine
2 lbs. currants
2 lbs. raisins
1 lb. almonds, slivered
½ lb. flour
1 lb. citron, orange and lemon peel
8 tbsp. ground spices
9 eggs, separated

Have ready a pot of boiling water, put an old plate in the bottom of the kettle to keep the pudding from burning. Wring out a large square piece of cloth in cold water and flour well. Put the mound of pudding in the center, bring the corners up and tie loosely with string. Drop into boiling water and boil 6 hours.

Editor's Note: This pudding may be packed into an oiled pudding mold, covered tightly with aluminum foil, set on a trivet in a kettle, water added to half its depth, the kettle covered, and the pudding steamed for about 3 hours. Fine for gifts, if made in copper molds.

Egg Nog

14 eggs, separated
3½ cups good bourbon
2 cups powdered sugar
½ cup light, fragrant rum
4 qts. coffee cream
2 cups powdered sugar
nutmeg to taste

Beat the egg yolks in a large bowl until smooth and thick. Dribble in the bourbon slowly, while beating, so that the liquor cooks the eggs. Add the 2 cups powdered sugar slowly and blend until smooth as satin. Now beat in the rum and cream. Beat the egg whites until stiff but not dry, then fold in the last 2 cups powdered sugar until well blended. Stir this into the yolk mixture and top with freshly grated nutmeg. Makes about 40 cups.

Notes from the Garden



With President Karl Carstens of the Federal Republic of Germany (standing at right) are William R. Orthwein, Jr. (l), First Vice President of the Garden's Board of Trustees, and Peter H. Raven, Director of the Garden.

In October, the Garden was exceedingly honored to host Karl Carstens, President of the Federal Republic of Germany. President Carstens was in St. Louis as part of a national celebration honoring three centuries of German influence in America. To mark the occasion, he planted a linden (also known as basswood) at the Garden's south end, near the Administration Building. His visit to the Garden was appropriate since it was a German immigrant, Dr. George Engelmann, who was responsible for the shaping of the Garden's scientific research program. Engelmann was born in 1809 at Frankfurt-am-Main. After receiving his degree from the University of Heidelberg, he came to the United States in 1833, finally settling in the St. Louis area in 1835. During his early years, he did extensive botanical exploration of the American west. His botanical work eventually made him one of the foremost botanists in the history of the U.S. In the 1850s he laid the groundwork for the botany program at the Missouri Botanical Garden. Today that program is the most active in the world. . . . . .

Visit the Largest Orchid Show in the World!

March 5-March 9, 1984

Steven Frowine, Public Horticulture Specialist, who is a specialist in orchids, will lead a tour to the Eleventh World Orchid Congress in Miami. While in the Miami area, other sites will be visited including a special tour of a beautiful private garden estate, Fairchild Tropical Garden, and Redland Fruit and Spice Park. Orchid and tropical plot nurseries will also be visited so you can bring home some unique plants for your own windowsill or greenhouse. For more details contact the Education Department at 577-5140. . . . . .



One of the Garden's most popular exhibits of the year, the Orchid Show, opens on January 28. There will be a Members-only preview on January 27; watch the mail for further information. . . . . .

Venite in Italia

Come to Italy: study the skies studied by Galileo, walk the ground walked by Ceasar, find the beauty and majesty that inspired so great an artist as Michelangelo, explore the land that spawned Christopher Columbus, Sebastian Cabot, and Amerigo Vespucci.

From April 29 until May 14, Members of the Missouri Botanical Garden will have the chance to journey to Italy, birthplace of the Renaissance. They'll see formal gardens, cathedrals, sixteenth century villas, and museums. They'll dine with countesses, and tour a cathedral founded 1300 years ago, even before the days of the Holy Roman Empire. (Remember that from your history book?)

This tour provides one of the grandest travel opportunities of the coming year offered anywhere; if you're interested, we suggest you make your reservations early, since we expect this tour to be extremely popular.

If you want further information or to make reservations, contact Judy Peil Travel at 726-2577 . . . . . .



Sue Strommen

Sue Strommen has recently joined the staff of the Missouri Botanical Garden as Manager of Public Relations. She was previously Manager of Public Relations of Bi-State Development Agency. Prior to joining Bi-State, she worked as a Writer/Editor with the St. Louis Board of Education and was formerly Advertising Manager of the Hugé Corporation. She has a Masters degree from Webster University; her undergraduate degree is from the University of South Dakota. . .



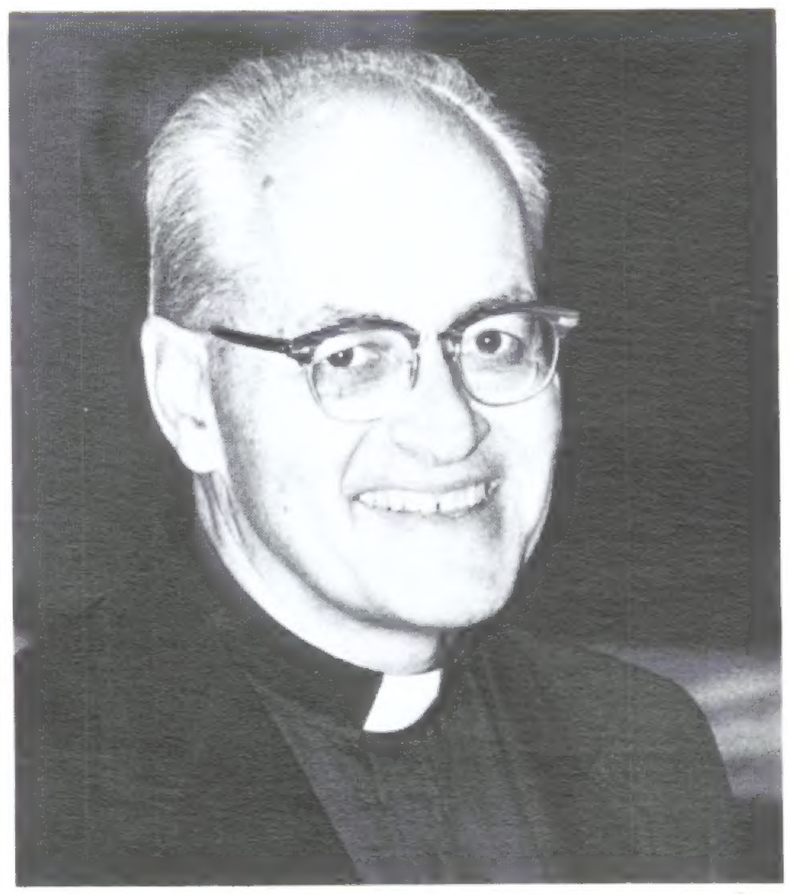
Nathaniel Jonnson

Nathaniel Johnson, recently elected as President of the St. Louis School Board, is also—by virtue of that position—a member of the Board of Trustees of the Missouri Botanical Garden. He succeeds Penelope Alcott. A graduate of Prairie View State College in Texas, Mr. Johnson has been a member of the Board of Education since 1979. He has been a federal food inspector for the past 27 years. Mr. Johnson is one of the six ex-officio trustees on the Garden's Board. . . . . .



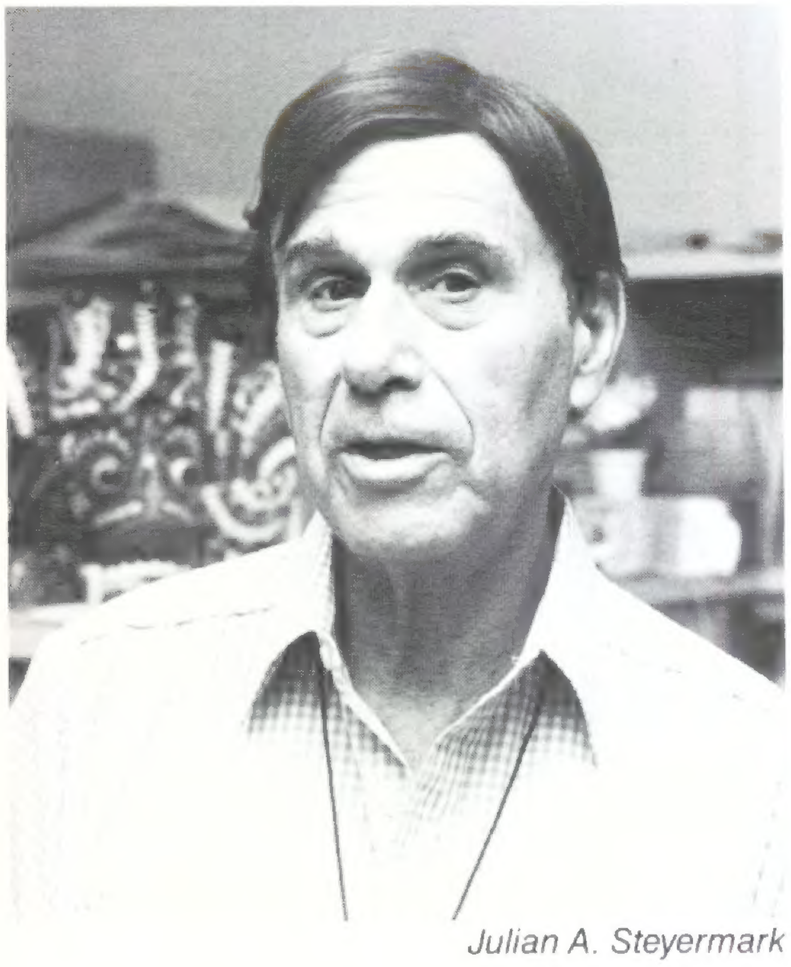
William H. T. Bush

The Garden now has stronger ties with one of the Midwest's premier private universities, St. Louis University. William H. T. Bush, a member of the Board of Trustees of the Missouri Botanical Garden, was elected chairman of the



Reverend Thomas R. Fitzgerald S.J.

University's Board. Formal ties between the Garden and the University were established in 1981, when the President of St. Louis University, Reverend Thomas R. Fitzgerald S.J., became an ex officio trustee of the Garden . . . . . .



Julian A. Steyermark

Probably no single person has contributed more to our knowledge of the plants of Missouri than Julian A. Steyermark. His interests in the flora of the state began during his boyhood in his native St. Louis, and his first paper on the flora of Missouri appeared in the mid 1930s. It was not until nearly 30 years later that he had accumulated sufficient information, much of it gathered on weekend trips from Chicago where he was living, to publish his monumental *Flora of Missouri,* which appeared in 1963. After an absence of nearly 50 years, Dr. Steyermark will return to St. Louis next spring to join the staff of his alma mater, the Missouri Botanical Garden, as a Curator in the Herbarium. He has spent the last 25 years at the Instituto Botánico, Caracas, involved with the botanical exploration of Venezuela.

Dr. Steyermark received his undergraduate education at Washington University, receiving a bachelor's degree in 1929. He received his master's degree in 1930 and his Ph.D. in 1933 from the same institution, working under the direction of Dr. Jesse M. Greenman, then Curator of the Garden's Herbarium. He was a research assistant at the Garden from 1934-1935, during which time he participated in one of our early plant collecting expeditions to Panama. That trip must have whet his appetite for the tropics, because he has maintained a life-long interest in tropical floras. He joined that staff of the Field Museum, Chicago, as curator in the Botany Department and remained there from 1937 until 1959. He is co-author of the Flora of Guatemala, a long-term project of the Field Museum, which was completed in 1977. It was during his years at the Field Museum that he developed an interest in Venezuela, and he left Chicago for Caracas in 1959. His main research interests for the past decade or so have been the publication of the Flora de Venezuela, several volumes of which he has authored. After returning to St. Louis, he will continue to work on the Venezuelan flora, and, we hope, renew his interest in the flora of Missouri.

Dr. Steyermark has had a long interest in conservation and was instrumental in the foundation of the Missouri chapter of the Nature Conservancy. In 1979 the Department of Conservation named a woodland near Hannibal for him.

Other honors over the years include the Henry Shaw Medal from the Garden in 1979, the Order of the Quetzal from Guatemala, 1958, the Order of Andres Bello, 1974, and the Order of Henri Pittier from Venezeula. In 1955 he received a plaque for special botanical achievement from Washington university. He has been a Honorary Research Associate at the Garden since 1948 and a Honorary Curator since 1980. *Marshall R. Crosby*
Director of Research

The Trustees, staff, and volunteers of the Missouri Botanical Garden were saddened to learn recently of the death of Isabelle Bonsack Campbell. She was a long-time and dear friend of the Garden, and the wife of Jules D. Campbell, a member of the Garden's Board of Trustees since 1970. Mrs. Campbell was a graduate of Mary Institute and of Washington University in 1933 and served as a member of the 50th anniversary class reunion committee earlier this year. She will be sadly missed.







The John S. Swift Walk *now provides direct access between the Linnean House (in background of top photograph) and the three lily pools east of the Climatron.*



New Members

September-October 1983

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Zerogee *(at left) by Minnesota artist Paul T. Granlund was installed recently near the Climatron, and was made possible by a gift in memory of Cora O. Latzer by her grandchildren. Shown with the artist are Mrs. Latzer's daughters, Ruth Donnell (center) and Jane Schott (right).*

Increased Support

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(continued on next page)

Increased Support

(continued from page 14)

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Tributes

September-October 1983

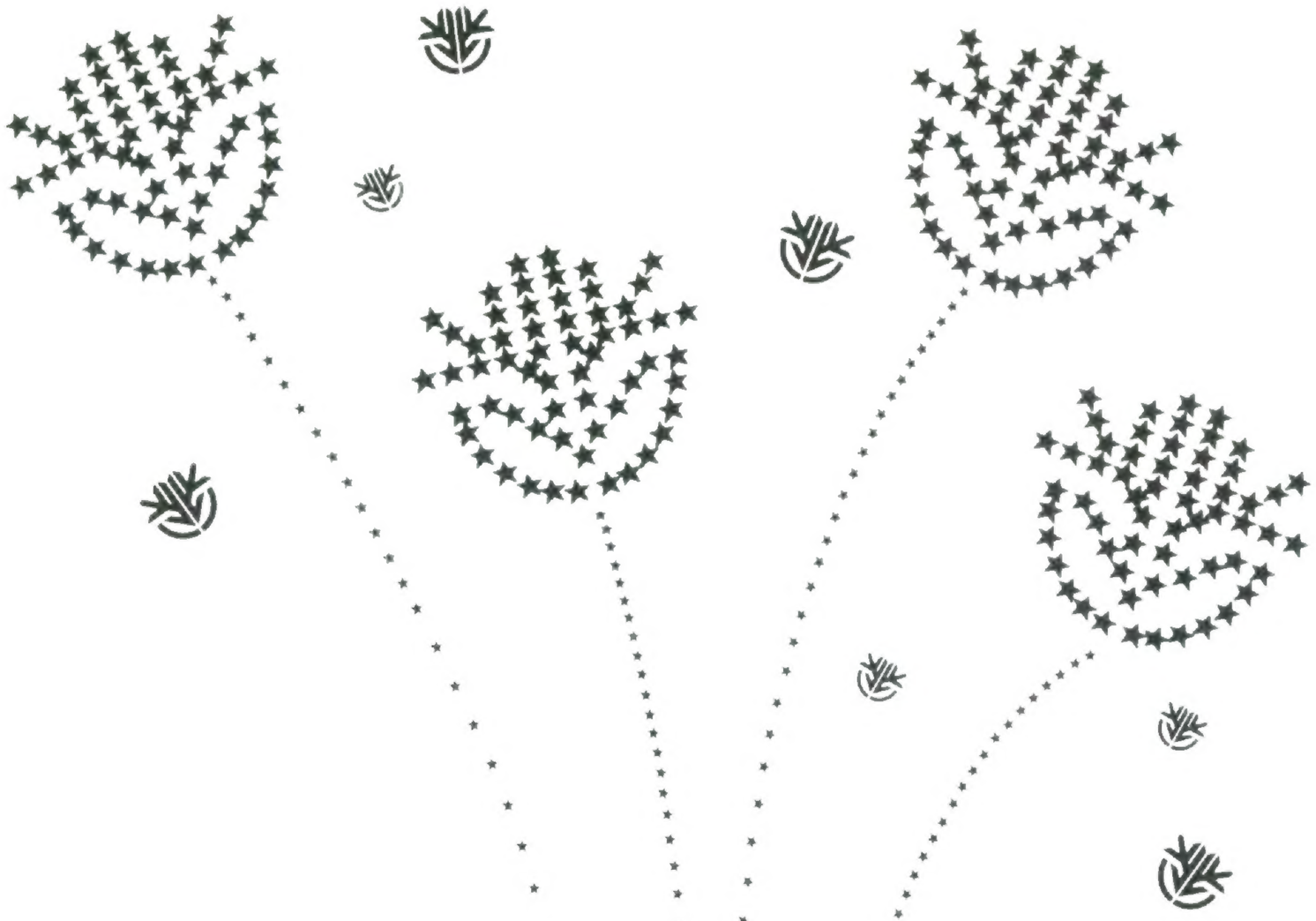
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